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EDUCATIONAL INFORMATION PROJECT.

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*INFORMATION RETRIEVAL, *INFORMATION STORAGE, *INFORMATION DISSEMINATION, *EDUCATIONAL RESOURCES, *COURSE OBJECTIVES, DATA PROCESSING, COMPUTER PROGRAMS, PUBLIC SCHOOLS, SECONDARY SCHOOLS, STUDENT PLACEMENT, CARDPAC INFORMATION SYSTEM, IOWA CITY, IOWA

TO AID DATA COLLECTION ANALYSIS, STORAGE, AND DISSEMINATION, INSTRUMENTS AND PROCEDURES WERE DEVELOPED FOR COLLECTING INFORMATION ON ALL ASPECTS OF THE EDUCATIONAL PROGRAM FOR A LARGE POPULATION OF SCHOOLS, INCLUDING INFORMATION ON INDIVIDUAL PUPILS, SCHOOL PERSONNEL, SCHOOLS, AND SCHOOL DISTRICTS. COMPUTER PROGRAMS AND DATA-PROCESSING TECHNIQUES AND SYSTEMS FOR TRANSCRIBING, INTEGRATING, AND STORING THIS INFORMATION HAD TO BE DEVELOPED, ALONG WITH A SYSTEM TO SORT AND DISSEMINATE THE NEEDED INFORMATION TO SCHOOLS AND OTHER AGENCIES UPON REQUEST. THE BEGINNING PHASE OF THE PROJECT INVOLVED DETERMINING WHAT INFORMATION ABOUT INDIVIDUAL PUPILS, PROFESSIONAL SCHOOL PERSONNEL, AND SCHOOL DISTRICTS WAS TO BE COLLECTED AND THE DEVELOPMENT OF DATA COLLECTION INSTRUMENTS. THIS INCLUDED REVIEWING THE RELATED RESEARCH AND COLLECTING AVAILABLE MATERIALS FOR GATHERING SUCH DATA. PILOT TESTS WERE MADE OF THE STENCIL CARD METHOD OF PREPARING INPUT. THE TESTS WERE SUCCESSFUL IN GRADES 3 THROUGH 12. PRIMARY CHILDREN EXHIBITED DIFFICULTY IN KEEPING THE CARDS ALIGNED FOR STENCILING. A THOROUGH ANALYSIS OF THE ELEMENTS OF THE INFORMATION SYSTEM INDICATED THAT THE SUCCESS OF THE SYSTEM WOULD REST LARGELY IN THE HANDS OF INDIVIDUAL SCHOOL PRINCIPALS AND THAT EACH OF THEM MUST THOROUGHLY UNDERSTAND ITS BASIC PRINCIPLES AND PROCEDURES IF IT IS TO SUCCEED. (JL)

EDUCATIONAL INFORMATION PROJECT

Cooperative Research Project No. E-031

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Iowa City, Iowa

1966

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I. THE NEED FOR CENTRALIZED INFORMATION SERVICES

Iowa's public school systems, faced with an expanding pupil population in our increasingly complex modern society, require more and more information about that population. Teachers, supervisors, administrators, school board members, and parents need information about the individual pupil and about all factors affecting his educational development. The State Department of Public Instruction, U. S. Office of Education, and other related State and regional agencies need much information from and about the schools. Research workers at all levels--public schools, colleges and universities, various State and Federal agencies, and professional organizations--need information essential to the study of basic educational problems.

The schools and the various agencies collect data of many types and in many ways, but there is serious inefficiency and lack of coordination, considerable overlap and duplication, and frequent repetition of tasks required of persons supplying the information. Teachers and administrators, filling out numerous questionnaires and report forms for different agencies and for different purposes, find they are supplying exactly the same detailed items of information over and over again, from agency to agency, and from year to year.

For this reason Iowa school personnel have good reason to be concerned about the growing burden being placed upon them by the data-collecting activities of the various educational agencies. This burden certainly does not bring about any improvement in the willingness of school people to comply with all requests for information. As a result a small percentage of replies and a disturbing incidence of error characterizes many of the data-collecting activities, thereby often defeating the basic purposes of data collection.

Inadequate Feedback

One of the reasons for the increasingly negative attitude of school personnel to requests for information is that adequate provision for feedback to the persons or schools supplying the information frequently has not been made. School personnel contribute heavily of their time and effort to these agencies, but the flow of information has been largely a one-way street. Many of the findings are surely of interest and value to the schools and individuals who supplied the original data and clearly they deserve to share in the results.

The local schools likewise are concerned with their own internal data-collecting and data-recording activities. Many schools have systems of pupil, course, personnel, facilities, and financial accounting with which they are not completely satisfied. In many instances the records kept locally are incomplete, or inadequate, and in even more instances the data that have been collected are not used to full advantage.

During the past few years, particularly, the schools have noted the amazing progress made in the development of high-speed automatic data-processing equipment, especially electronic computers, and have recognized that these machines must have great potential for public education, as well as for science, business, and industry. Many of the more progressive school systems have made determined efforts to try to utilize modern technology in their own data-collecting, recording, processing, and reporting activities. In general they have found that the problems of equipping and staffing a local data-processing center, and developing the necessary systems, computer programs, forms, and procedures, are very complex, confusing, and frustrating. Furthermore, because of the rapid changes taking place in this field, the equipment installed or systems developed often seem obsolete almost before they can be put into operation. Only the largest school systems have thus far been able to make any use of electronic equipment, and even they find that many of the things they would like to do are beyond their capabilities.

Although it is impossible for the schools and agencies to be too well informed about the many facets of their operations, it is possible to collect and have available more detailed information than can be assimilated or interpreted and used effectively. The needs of school administrators for better methods of data collection and for more information are surpassed only by their need for help in organizing, integrating, interpreting, and using the information that is being and may be collected.

Need for Improved Research Facilities

Closely related is the need for improved research facilities in education and for more effective utilization in research of the great masses of data that are being and can be collected by the schools and other educational agencies. Large-scale electronic computers and improved mathematical and statistical techniques for data analysis are now available, but it has been impossible to utilize these facilities to full advantage because the data have not been brought together and stored in a central location in a form accessible to electronic processing.

One of the most needed of all types of educational and psychological research is that designed to determine the antecedents, the earliest observable systems, and the basic causes of certain problems or types of human behavior which are usually not easily recognized and identified until relatively late in the life of the individual. The school dropout, the juvenile delinquent, the under-achiever, the educationally and vocationally disoriented or non-oriented pupil, the leader, the specially talented individual, the creative individual--all evidence types of behavior that have their roots in the earlier experiences, environment, and inheritances of the individual. These should be recognized, precluded, or strengthened as early as possible. Heretofore longitudinal research studies into these problems have necessarily been of the backward-looking type in which the needed historical data about the individual have been collected only after he has clearly manifested the critical behavior.

Research efforts of these types have typically met with very serious obstacles: (1) The difficulty of tracing back into the recorded history of the same individual and of collating different parts of the record. This is due to the lack of any universal pupil identification number system and to changes and variations in name, changes of residence, and transfers from level to level, school to school, community to community, and from school to life outside the school. (2) Lack of continuity in the records and the fact that much of the information most needed was never recorded at all. (3) The very large samples that must be drawn initially because of the attrition resulting from the aforementioned factors. And (4) the great costs in time, effort, and money required to collect and analyze the great mass of data that must be assembled.

Ongoing System Necessary

There is no satisfactory substitute for a permanent system of comprehensive and continuous accounting for a complete school population. The results of many longitudinal studies based on samples only cannot be put to immediate practical use and cannot be adequately evaluated through field trials because the data revealed as predictive for the sample are not being collected on an ongoing basis for any present population. Also, their is little immediate practical value for a particular school to know the early symptoms of dropout if observations of those symptoms have not been made, and are not being made, on all of its present pupils; neither is there any immediate opportunity to experiment with or to evaluate preventive measures that may be taken.

Sampling studies suffer from additional limitations. Most of the major costs--planning, design and printing of forms, computer programming, etc.--would be the same for even a small sample as for the complete school population of Iowa. A nationwide sampling might seem superior to a population study limited to one State, but a nationwide sampling comparable in quality, comprehensiveness, and intensiveness of data collection would be extremely difficult to achieve, particularly since it would require the complete commitment and exercise of the legal authority of 50 State departments of public instruction instead of only one.

There are many other types of research which have recently been made more feasible as a result of computerized and automated data processing techniques but which are still being bypassed because of inadequate studies in which complex and involved statistical techniques, such as factor analysis, multiple regression analysis, and multiple discriminant function analysis, must be applied to large numbers of variables for large samples of individuals or units. They also include educational studies in which the individual administrative unit (the section, the school, the school system, the community, etc.) is the basic unit of sampling, in which large and representative samples must be taken from population of such units, and in which very extensive data concerning individual pupils, teachers, etc., within each of these units also are needed, thus requiring the handling and analysis of extremely large and unwieldy masses of data.

Statewide Test Scores Available

A particularly important type of information about the educational development of the pupil consists of scores on standardized tests. For purposes of wide-scale research of the types suggested, it is especially desirable to have highly comparable measures of the educational development of all pupils in the population studied. This advantage is assured to the herein described Information System by the Iowa Testing Programs conducted by the College of Education of The University of Iowa. The programs consist of comprehensive (5-to-7 hours) achievement test batteries of high quality (the Iowa Tests of Basic Skills and the Iowa Tests of Educational Development) annually administered under closely controlled conditions to practically the entire school population of the State in grades 3-12. No other State testing program is as extensive or comprehensive as the Iowa program. The tests are centrally scored by Measurement Research Center in Iowa City and the scores permanently recorded on magnetic tape, making them accessible for integration into the information system described in this report.

Research Potential

The research potential of data collected under the Educational Information Project has both local and national implications. The Information in the Iowa Educational Information Center (IEIC) files will be made as freely available as possible to qualified research workers everywhere, at all times protecting the individual identity of pupils and personnel in the files. Magnetic tape or punched-card transcriptions of selected portions of the files will be provided at or near cost to responsible, qualified research agents upon request.

The data collected on a forward-looking basis will be processed by the still more advanced computers and techniques of the 1970's.

National authorities are being enlisted in the effort to estimate what specific information about pupils, teachers, and schools will be needed in the longitudinal research studies of the next two decades.

There exists, then, a very real and urgent need for more efficient data-collection procedures, for better ways of analyzing and interpreting data, and for reporting "digested" information back to the schools, for means of making the data collected centrally available for research, and for more effective utilization in research of the masses of data that can now be collected. The Iowa Educational Information Center represents a major effort to meet these needs in Iowa and to serve as a pilot operation other States may look to in providing similar services to local schools.

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II. OBJECTIVES

Objectives of the Educational Information Project as outlined in the project proposal were:

A. To develop instruments and procedures for collecting information about all aspects of the educational program for a large population of schools, including information about individual pupils, school personnel, schools, and school districts.

B. To develop computer programs and data-processing techniques and systems for transcribing, integrating, and storing this information centrally for purposes of research and service.

C. To develop computer programs and data-processing systems for selecting from the file, reducing, organizing, and disseminating the educational information needed by schools and other agencies to perform their basic functions more effectively.

Part of a Larger Project

These objectives are only part of a larger project which would include the development of integrated systems of educational data processing at both local and regional levels, the development of instruments and procedures for collecting information about all aspects of the educational systems on a large-scale, cooperative basis, the development of a central comprehensive file of educational information concerning and serving a large population of schools, the facilitation of research based on the information contained in this file, and the provision of informational services to local schools and districts and to State and national agencies.

Since the Educational Information Project is only part of a larger, more ambitious project, it is necessary to describe a number of aspects of the total project to bring the subordinate project into focus.

One of several major aspects of the total project is concerned with the development of data processing systems for local school districts. Recent technological advances include the improvement of document scanners, data-processing equipment, and computers. In recent years the development of equipment has progressed at a much more rapid rate than the development of methods of applying this equipment to educational needs. Some school districts are at present using data-processing equipment for routine clerical tasks--financial accounting, academic mark reporting, attendance accounting, and the like.

There exists a need, however, for additional, more efficient, and more sophisticated educational data processing methods. Many of the needed methods will be costly to develop and to test. Specific areas in which further development is needed include unit cost analyses, property accounting, bus route scheduling, building utilization studies, enrollment predictions, master schedule building, and ability grouping analyses. Work on all of these projects except bus route scheduling was done, but a concentrated effort was made in the actual collection of pupil, professional staff, and course information and made only at the public secondary level during the period covered by this report, June 1, 1964, through November 30, 1965.

Regional Data Processing Centers

A second aspect of the total project concerns educational data processing on a regional scale. Even though a number of school districts are installing and using their own data processing equipment, there exists now and will continue to exist for several years the need for regional data processing services for local districts. Envisioned are 16 regional service centers blanketing the State and coterminous with the present area vocational districts. These centers, equipped with medium or small-scale computers, would provide operational services to the local schools and would feed needed information to the State Department of Public Instruction.

Research Possibilities

Perhaps the most far-reaching effects of the total educational information project will come from the research made possible by the information contained in the central file described in the opening section of this report.

Information Services

Another aspect of the larger project will be the provision of information services to local schools and to State and Federal agencies. While these services may seem of immediate value to Iowa schools only, the nationwide benefits ultimately accruing from the demonstration and service aspects of this information project should be apparent: (1) The agency staff represents a facility for research and development of new and improved information techniques and services to the schools that may be adopted or adapted by other State and national agencies; (2) the plan provides for the immediate field trial and evaluation of these services on a very wide scale; and (3) the information agency, in conjunction with the College of Education of The University of Iowa, offers excellent opportunities for the training of graduate students who may later develop and administer similar services elsewhere.

All of the services to be provided, furthermore, make an indirect contribution to national outcomes in still another sense. This is that they constitute a necessary reward to local schools for participating in those aspects of the plan that have research value only, or for collecting and reporting research data in which the schools have little or no immediate interest.

The work done on improving and evaluating the following services planned as part of the larger project should be of much benefit to schools throughout the nation.

Goals of the Total Information Project

The total information project is designed to:

A. Develop and test a complete system of cumulative files for individual pupils. Each school each year will be provided with a well organized and recently updated file of cumulative individual records containing much more detailed information than any school up to now has attempted to collect as well as summary measures and categorical descriptions inferred by the computer from the detailed data collected. At the beginning of each school year, each classroom teacher will be provided with his own set of condensed summary records for the pupils in his own classes. These records will contain only that selected information which is of special value to the teacher in the individualization of instruction and guidance and which has been extracted and inferred from the complete record by the computer. Summary records of individual pupils should constitute a very powerful aid to the improvement and individualization of instruction and guidance in every school.

In general these records up to now have been very poorly maintained and even more inadequately used. One reason is that such records are not conveniently accessible to the individual teacher and counselor. Another is that any really adequate record contains far too much detailed information to be readily interpreted. The teacher and counselor are not equipped for, nor do they have the time for, the painstaking analysis required to extract from a whole record the meanings it contains. There is a nationwide need, therefore, for research and development leading to improved types of records and record systems--types that not only will communicate effectively much more information than before but will make it genuinely accessible, both in the sense of placing it literally within an arm's reach of the teacher, and in the sense of making it far easier to interpret and use.

B. Develop and test a system for reporting to each school system individually an annual descriptive analysis of its own student body, showing distributions of various measures, characteristics, and traits of pupils in relation to similar distributions for the State as a whole.

C. Develop and test a program which would provide each school system with an annual analysis of its teaching and administrative staff, and with multiple copies of convenient staff directories for individual buildings and for the system as a whole.

D. Provide the Iowa State Department of Public Instruction and the U. S. Office of Education with a great variety of types of descriptive statistics concerning schools and school personnel such as distributions of school personnel with reference to salary, tenure, experience, degrees, types of certificate held, etc. --both for individual schools and the State as a whole. The central large-scale use of powerful computers and high-speed data-processing equipment permits the testing and development of a far greater variety of services of this kind than has heretofore been practicable.

E. Serve as a clearinghouse of information about schools and school personnel from which external agencies of all kinds, including many national agencies, may secure information without approaching or inconveniencing individual schools. This approach should substantially reduce the number of requests for information received by school districts as mentioned at the beginning of this report.

F. Make it possible to conduct large-scale studies of quality of school achievement and its relationships to controllable factors in the school.

G. Provide individual high schools with a programming and scheduling service for assigning pupils to sections, classrooms, and instructors in desired high school subjects. Continue to develop and improve computer scheduling systems to meet educational specifications.

H. Continue to develop and test data systems dealing with pupil attendance and mark reporting.

I. Develop data systems useful for study and processing of building utilization, bus routing, inventory control, unit costs, etc., for individual school systems.

J. Develop data systems for large-scale studies of quality of school achievement and its relationships to controllable factors in the school.

K. Develop data systems to facilitate study of the implications and consequences of proposed policy changes in salary schedules for large school systems.

L. Develop data systems to analyze and project bonded indebtedness programs and a fiscal capacity in relation to economic trends for individual school systems.

M. Develop and test computer simulations of a wide variety of problems affecting school systems.

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III. RELATED RESEARCH

There has been no research or development in the nation to compare to the scope of this undertaking; however, there have been numerous activities on a smaller scale which contribute to the total system. The problem of a total integrated system is being studied for higher educational institutions as part of the Henle Project, and the systems problem related to a large single school system is being developed by the Chicago Public Schools. The most recent undertaking in the field has been by 13 Midwest States under Title V, Section 505, of Public Law 89-10, for the development of a total integrated Educational Information System compatible among the Midwestern States. The States involved in this project are Iowa, Colorado, Illinois, Indiana, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. Because of its experience with the Information Project described in this report, Iowa, through its State Department of Public Instruction, should make an extremely valuable contribution to the 13-State Title V project. Other than these three projects, previous developments can best be considered in relation to the individual categories of information involved--pupils, staff, facilities, program, and finance.

Pupil Information

Many school systems have been processing pupil information with electro-mechanical equipment since the 1930's. In more recent years computer sectioning programs have been developed by International Business Machines, New England School Development Council, McDonnell Automation Center, General Electric, Systems Development Corporation, RCA, Burroughs, and the Iowa Educational Information Center.

Work on the complete pupil record for individual schools has been carried on at the California State Department of Education, and development of longitudinal records on exceptional pupils has been done in the Florida State Department of Education. Techniques and equipment developed for use in scoring of nationally standardized tests have been developed over the past three decades by SRA, California Testing Bureau, Educational Testing Services, and Measurement Research Center.

Staff Information

Many State educational agencies have collected and processed staff information by machine. A few State educational agencies have carried on this work for many years to a limited extent; however, most of the States began such processing as a result of Title X of the National Defense Education Act of 1958. Notable work in this area has been done by the Florida State Department of Public Instruction, but to date most of these systems are incomplete.

A nationwide effort is now underway to standardize the data in these systems in order to supply it to the U. S. Office of Education in machine-usable form.

Facilities Information

Research on facilities information systems has been neglected. Record keeping with regard to land, buildings, and equipment has never been emphasized in education because of the public and/or eleemosynary nature of the institutions involved. Many State educational agencies maintain files of school building plans and data for approval purposes, and in a few cases have mechanized parts of the information, usually for State-aid distribution purposes. Outstanding efforts of this type include those in the State offices in Washington, Pennsylvania, Utah, and Mississippi.

A very limited number of local school systems have begun to mechanize equipment records in recent years. Most of the current efforts are based on the coding systems developed in Jefferson County, Colorado, which have been published by the Association for Educational Data Systems. Statewide systems for equipment records have not been developed.

Program Information

State educational agencies have collected information about school programs for many years. Most of these data concerned course offerings and have been used for evaluation purposes. Many States began to process this information by machine under the aegis of Title X of NDEA of 1958, using procedures originally developed in Iowa. In the best of these systems, such as those of Tennessee, Florida, Iowa, South Carolina, and Maryland, the course offerings are related to teacher qualifications and to enrollments in individual courses. The problems of course definition and content have been studied in California. The handbook now under development in the U. S. Office of Education should help to provide the standard terminology necessary to further this phase of the total information system.

Financial Information

Efforts to develop standard account classifications date from the turn of the century. The most notable of these efforts for public school use is Handbook II in the Records and Report series published by the U. S. Office of Education in 1958 entitled Financial Accounting for Local and State School Systems. This publication resulted in revision of

State and local accounting systems in most of the States. A supplement to this handbook developed a coding scheme for simultaneous classification of functions as well as objects. Variations of this coding scheme have been adopted in many local systems using machine data processing.

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IV. PROCEDURES

The crucial beginning phase of the Educational Information Project involved determining what comprehensive information about individual pupils, professional school personnel, and school district characteristics was to be collected and the development of data-collection instruments. This included reviewing the related research and collecting available materials for gathering such data. The handbooks developed by the Office of Education in the areas of pupil accounting, financial accounting, property accounting, and instructional program accounting were used as basic guides in determining the specific items of information to be collected. Considerable use was made of highly qualified consultants on a national level. Previous efforts, such as Project TALENT of the University of Pittsburgh, also were reviewed in designing large-scale data-collection instruments. Research leaders in various major areas participated in selecting specific information items they felt would most likely be needed in the various longitudinal research studies presumably to be carried out on the basis of the information collected.

Also necessary in the beginning stages of the project was development of a schedule of events for conferences, experimental tryouts, and full-fledged administration of the system.

During the September-November period of 1964, the Information Center staff was organized into three areas--educational specifications, systems development, and field operations--and work on the development of instruments for collecting comprehensive information about individual pupils neared completion. Similar instruments for gathering data on professional school personnel and school district characteristics also began to take shape. The system of pupil, staff, and course data collection was given the name CardPac System of Educational Accounting since the System literally uses packs of cards for data collection.

Major Conferences

Three major conferences were conducted in October, 1964, to discuss the collection of pupil biographical data, assessing needs of the pupils, teachers, administrators, and State and Federal educational agencies.

On October 19 four Center personnel--Associate Director Ralph A. Van Dusseldorp, Program Coordinator Bruce Alcorn, and Staff Associates Lee Hoover and William Miller--met for a detailed conference on the proposed system with staff members of the State Department of Public Instruction.

On October 21 Director Robert W. Marker, Alcorn, Hoover, Miller, and Staff Associate Robert Stanley participated in a day-long conference at Iowa City with teachers, guidance counselors, principals, and superintendents from various areas of the State.

The conference on the 21st was designed to spell out pupil biographical wants and needs of school personnel. An introduction to the Information Center by Dr. Marker and an outline of conference activities by Hoover opened the conference. Then Project Director Alcorn described the proposed system. Future projections were presented by Stanley, who spoke on services to schools, and Miller, whose topic was research activities.

The conference then focused its attention on the kind of pupil biographical data the school people want and the kind they need. Key questions included: (1) What kind of pupil data will they use? (2) What are possible pupil, staff, and community reactions to the collection of pupil data? and (3) What are the conference participants' general reactions to the data collection project?

Group discussions led by Miller and Stanley were centered in two areas: (1) problems of administering the data-collection process at the local level and possible research needs to be met by this project; and (2) possible services to schools as a result of this project and possible research needs to be met by this project.

Suggestions and observations made at the conference on pupil biographical data:

1. Include in the questionnaire a validity check to guard against random answering.

2. Should the system be made mandatory? It was voiced that services generated by the system will cause all schools to desire it. In regard to certain items, it was felt that the addition of foils allowing the pupils not to answer would be appropriate.

3. Several participants pointed out the particular importance of teacher feedback, i.e., giving the teacher an important service.

4. The need for opportunity to ask additional questions pertinent to an individual school program or system was voiced and assurance was given that this would be possible.

5. It was hoped that instructions for the various forms might be so simple that little or no reference need be made to a manual.

6. In discussing how best to orient the teacher to this project and gain his support, these suggestions were made:

(a) Involve teachers wherever possible in construction and exploration of the questionnaire.

(b) Bring teachers together at district or county level for orientation meetings concerning the project.

(c) Send individual letters to teachers explaining the benefits and their role.

(d) Produce a mock-up teacher report or typical total-systems report when orienting teachers to the nature of the system.

7. The question of who is to coordinate the timing of administration and collection of the data was raised. It was suggested that the State Department of Public Instruction would fill this role.

8. It was pointed out that data collected in the spring and fed back the next fall would not have the impact and use for the teacher as data collected early in the year and used on the pupils a teacher currently has.

9. It was suggested that communication media such as Midland Schools and other publications received by numerous teachers would build support and recognition of the worth of this project.

10. Discussion was heard on ethical and legal implications of collecting certain types of data such as religion, dating behavior, etc. In particular the following questions of the secondary form of the suggested Student Biographical Information Questionnaire were criticized and recommended for deletion: Questions 6, 7, 20, 21, 22, 48, 63, 64, and 65. In addition, it was recommended that items 60 and 61 be provided option foils for pupils viewing the item too personal. It was also felt that items 76 to 79 should be reduced to a single item thought to reflect the underlying desired information.

The items referred to in the preceding paragraph in the proposed questionnaire:

Question 6. Which one of the following statements best describes your use of tobacco? A1 I smoke very heavily. A2 I smoke regularly. A3 I very seldom smoke. A4 I used to smoke but I have stopped. A5 I never smoke.

Question 7. Which one of the following statements best describes your use of beer, wine, and liquor? A1 I drink at least one of them quite frequently. A2 I drink beer or wine occasionally, but not liquor.

A3 I drink at least one of them on special occasions only. A4 I drink at least one of them occasionally. A5 I never drink them.

Question 20. How much money do you presently owe? A1 None. A2 Less than $25. A3 $25-$100. A4 $100-$500. A5 $500 or more.

Question 21. How often have you considered quitting school? A1 Never. A2 Once. A3 Occasionally. A4 Frequently. A5 I have quit at least once.

Question 22. Which one of the following statements best applies to you? A1 I am single and I never date. A2 I am single and I occasionally date. A3 I am single and I frequently have dates. A4 I am single and I date very often. A5 I am single and I steadily date the same person. B1 I am engaged. B2 I am married and have no children. B3 I am married and have children. B4 I am a widow or widower. B5 I am divorced or separated.

Question 48. What is your religious preference? (Twenty denominations were listed along with "other" and "no preference.")

Question 63. If your family is renting your home or the place where you live, about how much are they paying each month? A1 Less than $60. A2 $60 to $89. A3 $90 to $119. A4 $120 or more. A5 We have bought (or are buying) our home.

Question 64. Which of the following best describes your family finances? A1 Barely able to make a living. A2 Have the necessities. A3 Comfortable. A4 Well-to-do. A5 Wealthy.

Question 65. From which one of the following sources does your family get most of its income? A1 Professional fees. A2 Business profits (including profits from a farm). A3 Fixed salary (paid on a weekly, monthly, or yearly basis). A4 Wages (paid on an hourly or daily basis, and depending on the number of hours worked). A5 Some other source, not mentioned above.

Questions Deleted

The preceding items all were deleted from the questionnaire. Questions 60 and 61 asked the highest level of education the mother and father had attained. At the suggestion of the school people, an option foil "I do not know" was added to these two items.

Items 76-79 asked pupils for the number of hand tools, electrically operated power tools, cars, or station wagons owned by the family and the year of the latest model car or station wagon. These also were deleted from the questionnaire.

11. It was suggested that IEIC staff members meet with a small group of principals alone and perhaps with parent groups to get reactions to individual items.

12. It was also suggested that a comparison might be made between methods where the teacher reads the items to the class as opposed to the pupil reading the items to himself. It was pointed out that this might lead to teacher bias influencing the data.

13. It was felt that a complete resume of the total system be given to administrators. There was assurance this would be done.

14. The question arose as to who would ultimately stand the expense for the data collection and processing. The group received an explanation of how current expenses are being met and projections on how it might be met in the future. It was stressed that the cost per pupil would be quite small.

Possible Total-System Schedule

A group discussion led by William Miller of the IEIC staff on "problems of administering the data collection at the local level and possible research needs to be met by this project" produced the following schedule of events as a possible total system schedule:

1. Middle of August--Hold a county level orientation meeting to include the county superintendent, other superintendents, principals, guidance personnel, and teacher representatives of the local educational association.

2. Teacher Workshop (before school begins)--Collection of teacher information (Iowa Professional School Employees Data Sheet) on cards with prior data already recorded.

3. First day of school or first day of second week of school--Administration of the Student Biographical Data Questionnaire.

4. Administration of Iowa Tests of Educational Development (if given)--Usual time.

5. Receive printout of class roll with selected pupil information and ITED results--As soon as possible.

6. Second week of school--Teacher places her card with her pupil cards and these are sent in for production of class lists and State report of pupil attendance.

7. Receive mark cards for each pupil by class--Week before marks are given.

8. Teachers record marks (semester) and send these in--Mark cards (in packs by teacher and school) are processed by MRC and information added to pupil file.

9. Printout of mark distributions and labels for cumulative folder--As soon as possible.

10. Collection of Iowa Tests of Basic Skills results (if given) and regular return after adding information to the pupil file.

11. Collection of second semester academic mark information on mark-sense cards for processing by MRC--End of year.

12. Summer--Receipt of cumulative folder labels (Report card possible also?).

13. ADA reports computed by MRC for each school system.

Discussion in Miller's group on research reports desired by teachers and administrators produced these suggestions:

1. Relationships between pupil achievement measures and the teacher-assigned marks.

2. Mark distribution summaries for all teachers and ability levels.

3. Identification of "underachievers" and "overachievers."

4. Correlations between standardized measures of ability, interest, achievement, etc., and marks earned in courses.

5. Community data study for inferring or aiding in development of curriculum.

The third major conference on the proposed educational information system and pupil biographical data in particular was conducted October 29. At this time professional assistance came from faculty members of The University of Iowa College of Education.

Conference on Output

Another major conference, this one concerning output to local districts, was conducted at the Information Center December 17, 1964.

Teachers, guidance counselors, principals, and superintendents gathered for small-group meetings chaired by Information Center staff members. The various groups:

Teachers' Group--Eldon Moon of McKinley Junior High School, Cedar Rapids; John Penny, Grinnell Junior High School, Grinnell; David Mitchell, Adams Junior High School, Mason City; Robert Stanley of the Information Center, recorder; and Dale Strotman, Information Center, chairman.

Guidance Counselors' Group--Glenn Fear, Tipton High School, Tipton; Percy Johnson, Madison Junior High School, Burlington; Lowell Perry, North High School, Des Moines; William Miller of the Information Center, recorder; and William Lee Hoover, Information Center, chairman.

Principals' Group--John Jensen, East Side Junior High School, Council Bluffs; Bill Bleeker, Central Junior High School, Iowa City; Gordon Harr, Pleasant Valley High School, Pleasant Valley; Dr. Bruce Alcorn of the Information Center, recorder; and Ralph Van Dusseldorp, Information Center, chairman.

Superintendents' Group--William Diedricksen, Tipton Community School District; Lewis Doubleday, Nishna Valley Community School District; Charles Joss, West Des Moines Community School District; Donald Hahn and William Sipes, both of the Information Center, recorders; and Dr. Robert Marker, chairman.

56 Tables

The groups were shown a total of 56 tables as suggested output of the Information Project and were asked to evaluate each one. Some items were eliminated because of the responses, others altered, and yet others added. One of the documents adopted as a direct result of the conference was the CardPac Student Data Summary, a 3-by-9-inch form which was fed back to the schools in 9 copies in August following the May, 1965, administration of CardPac. The copies were for principals, teachers, and guidance counselors and were designed to improve individualized instruction and counseling. The Student Data Summary is described in the feedback portion of this report.

An explanation of the data in each table was given. Discussion in this report will be limited to the counselors' reaction because documentation made at the time of their reaction was the most concise.

The first five tables showed the distribution of marks in all subjects and the Iowa Tests of Educational Development composite scores for all grade levels. Percentages were computed for boys, girls, and both at the local, district, and State levels. These tests, also known as ITED, are given annually to most pupils in grades 9-12 in Iowa. (For a description of ITED, refer to Section X of this report entitled"Supporting Facilities.")

In these tables letter marks were converted to a 4-point scale (A-4, B-3, C-2, D-1, F-0). The percentage of boys, girls, and all pupils at each point on the scale and the comparable ITED percentage were shown. An example:

Letter Mark	4-Pt. Scale	Boys	
		Mark	ITED
A	4	8*	6
B	3	29	22
C	2	43	38
D	1	17	26
F	0	3	7
Mean		2.1	1.8
Percentile rank among Iowa schools		54	47

*Percentage

The counselors said they had difficulty understanding the tables. Among their questions were "What subjects would be used?" and "What are the means?" Their reaction was that there is no need for duplicating the ITED distribution of existing data but that marks were valuable. They felt that each of the five tables--all grades, grades 9, 10, 11, and 12-- would be of some value to them. A question was raised concerning standardization of marks for all schools. Generally, there was a favorable reaction to the tables with the exception of the difficulty of interpreting scale values (they preferred the use of deciles instead of a 4-point scale or quartile). The counselors felt these particular tables needed a better explanation relating to scale values, standards, norms, etc. They also said school size should be considered.

Four tables contained data on distributions of combined marks for all English, mathematics, science, and social studies courses and the appropriate ITED Index. The format was the same as that of the first five tables. The counselors felt these four tables would be meaningful, particularly to teachers, curriculum directors and supervisors of evaluation, but an explanation of terms, norms, etc., again would be necessary. Mark and ITED data perhaps should not appear in the same table because of the danger of false comparisons unless adequate instructions are provided, the group declared.

Four additional tables--following the same format--provided data on distributions of marks and ITED English Index for English Literature, ITED Social Studies Index for Social Studies, ITED Science Index for physics, and ITED Mathematics Index for solid geometry. Comparisons could be made by a principal of the marking distributions in each of these areas in his school with other schools in his district and the State as a whole. This in no way should be interpreted as meaning a school or district should conform to the State pattern of marking. Such data, however, would be helpful in any re-examination by a school or district of its marking policy and philosophy. A comparison can also be made of the differences between marks and ITED scores at the school, district, and State levels. For example, a school which has a great difference between the percentile rank of its marks in English Literature and the percentile rank of its ITED-English Index could investigate the condition, especially if such a difference is very inconsistent with the picture for the remainder of the district. The ITED data in effect yields norms for the State, each district, and each school. This can be very useful to those schools who consistently score far above or below the national comparison. Many of the same comments on the previous tables were applicable here--need definitions of scale, index, etc. Again, the counselors wondered if a comparison of ITED and mark percentiles was valid. Separate tables--ITED and marks--might be more desirable. The possibility was raised of offering these sorts of tables on a subscription basis for those desiring them.

Two tables were based on educational plans of 12th graders and of all pupils, tying these plans to mark-point averages and ITED composite scores. Listed as choices for responses were high school graduation only, vocational school, junior college, college, and post-graduate. Knowing the educational plans of pupils is invaluable in curriculum and extracurriculum planning. Such data are also useful in more specific planning as is done by pupil personnel staff. For individual pupil work, this information can serve as a reference for the purpose of determining how realistic pupil plans are. Among the questions raised by the counselors: Will a "no plans" response and a "less than high school" response be included? The group also said boy-girl categories are needed and that "technical school" should be added to the list of responses. They said clarification of mark-point average is necessary (cumulative or last semester?). The feeling also was expressed that it would be meaningless to ask 7th and 8th graders for their educational plans. It was the consensus of the group that educational plans of pupils would be of high value to counselors.

Two additional tables covered distributions of mark-point averages for the spring, 1965, term and ITED composite scores for 12th graders grouped by vocational plans and the same data for all pupils. The counselors suggested adding boy-girl categories and said a definition of terms was needed. Disagreement was voiced regarding what grade levels are appropriate for this data.

Another table presented correlations of ITED scores with marks in selected courses with the explanation that the correlations would in themselves be research data showing the existing relationships between ITED scores and marks. This would present some evidence as to which ITED scores are better predictors than others of academic performance for the various courses. In addition, should a school discover significant differences between these correlations recorded for their school and those of their district as a whole, they may want to search for the causes. The counselors felt this table was excellent and again called for a boy-girl breakdown.

Another table showing an age-grade distribution of boys and girls was described by Information Center personnel as being useful to a school system in curriculum and activity planning. Some aspects of curriculum and certain activities are more related to chronological age than they are to grade. It can also be of use to the administration in enrollment problems, especially when collected for several years so patterns emerge. The counselors felt this information would be of only moderate value and if used should include a boy-girl-total breakdown. They said such information could be used in conjunction with dropout studies and also would indicate a difference in age between sexes.

One table--distances traveled by the pupil to school--was viewed as being a valuable tool for transportation directors in any evaluation or reorganization of bus policy and schedules. Also mentioned was that the attendance director might find use for such information in analyzing attendance trends, especially when seeking precipitating factors involved in absenteeism. In response to a question, the counselors were told that categories of self-transportation vs. transported would be possible.

A table on distributions of marital status of parents (responses: married, divorced, separated, father not living, mother not living) also was considered extremely valuable by the counselors. Information of this nature might be valuable in assessing the need for more and better guidance and counseling programs and personnel, it might be of great importance where the selection of other key personnel of the system is concerned, and it could possibly be correlated with attendance figures, number of personal pupil contacts, or used in conjunction with local juvenile authorities or welfare boards.

Seven suggested tables listed distributions of mark-point averages and ITED composites for all pupils and for individual grade levels, the grouping based on marital status of parents. These proposals were enthusiastically supported. It was explained that professional school personnel would find data relating parent marital status to mark-point averages and ITED scores valuable in both curriculum and guidance functions. It may indicate to a school that course content or even course offerings may need re-evaluation in light of such data for that school. For example, a school or district may feel that special attention should be given to the academic progress of pupils coming from broken homes. In addition a district may feel that certain types of professional personnel are needed in greater numbers at certain schools than at others as a result of an examination of these data. In the discussion involving the mark-point averages, ITED composites, marital status tables, a need also was expressed to include a table on the number of times children have moved.

Seven additional tables involved distributions of mark-point averages and ITED composites for all pupils by working status of parents. These tables also drew highly favorable responses from the counselors.

Also described was the form in which responses to questions added by local schools could be fed back. The format included distribution of responses by boy and girl within grade levels. For example a school may wish to include items to determine how many pupils have parents who are Federal Government employees or work for a particular industry in the community, how many pupils plan to enroll in a local community college, or how many pupils would be interested in taking a particular foreign language course if offered the following year. The counselors, in evaluating this proposal, said all grade levels (7-12) should be included broken down by number, percent, and totals. They also felt the district norms would be valuable.

Another table receiving a favorable response from the counselors correlated the pupil's occupational plans and the parents' occupation, grouping occupations by A (professional), B (semi - professional), C (clerks), D (skilled), E (proprietors), F (semi-skilled), and G (unskilled). The table showed the percentages for each parent and for the pupil in the various categories by schools, district, and State. The group felt more definitive information was needed to understand this table, including a better breakdown of occupations.

Also drawing a favorable response was a table showing pupil educational plans and parents' educational level distribution with the following breakdown: A (less than high school), B (high school), C (business, trade, or technical school), D (junior college), E (Bachelor's Degree), F (Master's Degree), G (Doctor's Degree), and H (post-high combined). Once again, the counselors felt the definitions needed careful attention.

Another suggested table tallied the time spent studying by pupils in-school and out-of-school by grade level within school, district, and State. The counselors' reaction was that the number of hours of study should be indicated for a certain period (a week perhaps), and that totals should be summarized for both boys and girls. They also felt the term in-school study needed clarification.

A table on outside-of-school study locations of pupils (at home, in a library, at a friend's house, some other place besides the above 3, don't study outside of school) was felt more meaningful than the in-school, out-of-school correlation in the preceding table. However, it was pointed out that pupils could mark several of the responses and that a category "all 3 of the above" was needed. They also suggested combining this and the preceding table.

A table on pupil participation in extracurricular activities (athletics, speech & dramatics, music, publications, student government, service clubs, honor societies, academic clubs, hobby clubs) was studied, and it was suggested that a "none" response was necessary. A correlation between extracurricular activities and mark-point averages also was suggested. This table would enable the administrator to see at a glance the participation in extracurricular activities by grade and by sex compared with schools of this size in the entire State. This would put in the hands of an administrator the comparative knowledge he needs in evaluating his own program. He may realize he has fewer girls in activities than most other schools or he may realize that the emphasis of his program is significantly different than other schools of his size.

Also considered beneficial were data concerning the time pupils work for pay or not for pay, giving the working pattern of one group of pupils compared to pupils in comparable schools and in the State. Differences here might mean that the administrator would want to use this information in talking with parent groups, business organizations, etc. This also might provide a tool in evaluating ITED scores or participation in activities. For example if a school has a lack of activity participation by a certain group, and this same group works many hours, then it is obvious that for some reason or reasons the world of work has a stronger hold on this particular group than does the activity program. The counselors observed that a correlation between working time and mark-point average would be very useful.

Pupil automobile ownership and driving habits were considered highly useful but the counselors had difficulty interpreting the proposed format listing pupils by state percentiles. Categories included: have driver's license, own an automobile, drive to school most days, drive to school occasionally, never drive to school, drive parents' car frequently, and drive parents' car occasionally. The counselors urged a correlation between mark-point average and ownership or access to an automobile.

Another table receiving favorable comment listed subject area and enrollment for boys and girls by grade level within a particular school, schools of comparable size, the district, and the State. This information might provide projected subject area needs for curricular planning, identify distribution of pupil population by grade between the academic and vocational areas for purposes of curricular planning and guidance service emphasis, and conceivably could offer a comparison of pupil enrollments in subject areas between attendance centers within the district for purposes of developing guidance services.

One table to which the group reacted negatively reflected pupil aspirations, listing these responses: graduate from high school with honors, become a community leader, earn at least $10,000 per year, earn at least $20,000 per year. As finally worded in the questionnaire, aspirations were given in the form of occupations. Suggested usage of responses in the aspirations area include: (1) Comparison of pupil aspirations between State and district for purposes of curricular emphasis. (2) Comparison of pupil aspirations by sex and grade for purposes of identifying realism of aspiration. (3) Comparison of aspiration and ITED scores for purposes of identifying realism of aspiration. (4) This information used with information on preference and choice could provide data for a longitudinal study to determine at which grade level or age group the choice becomes most realistic.

Distribution of composite ITED scores among 12th graders versus mark-point average was suggested in another table, but the group felt the table was difficult to interpret. Use of the multivariate output form--showing the percent of pupils occupying a categorical position between two variable positions--could pinpoint the number of pupils scoring at various levels on the ITED composite in relation to their I.Q. as measured by another test such as Otis.

Possible combinations of variables or categories include mark-point average versus ITED composite scores (for each grade level, boys and girls, with percents for State and local), MPA versus educational aspiration level, MPA versus vocational aspiration level, MPA versus socio-economic aspiration levels, ITED composite versus educational aspiration levels, ITED composite versus parent marital status, MPA versus parent marital status, ITED composite versus parent educational background, MPA versus parent educational background, distance from school versus frequency of extracurricular participation, distance from school versus MPA, hours of study per week versus ITED composite, discrepancy between ITED and MPA percentiles versus parent marital status, I.Q. versus ITED composite, I.Q. versus MPA, marks earned in any particular subject versus ITED scores in any sub-test, marks earned in any subject versus I.Q.

Also suggested was a format for use in relating individual factors to multi-variables such as mark-point average and/ or Iowa Tests of Educational Development. Shown in an example were the relationships existing between control of an automobile (defined as having daily access) and scores on ITED and mark-point average. The same format could be used for showing the frequency of changing school districts, pupils with separated parents, pupils living with a guardian, pupils playing football, pupils working 20 hours a week, pupils planning to go to college, pupils with a daily newspaper in the home, pupils who attended a parochial school, pupils writing with their left hand, pupils who are the youngest in their family, pupils whose older brother or sister went to college, pupils watching television 20 hours or more per week, and pupils riding the bus to school.

The list of single factors that could be plugged into this format is limited only by the selection of items the schools would be willing to collect. The advantages of this type are apparent--it is simple and the format and many of the statistics are constant. The disadvantage is that it is restricted to one factor against a multi-variable. In other words one of the items does not permit a degree factor, i.e., the pupil either controls a car or he doesn't.

A comparison of ITED composite scores obtained by 12th grade pupils and their composite mark-point average for the first semester of their senior year were incorporated in another table. The ITED composites were categorized into five groupings (0, 1, 2, 3, 4). Marks received by pupils were averaged and an appropriate letter grade category assigned to that average. The table then presented three tabular representations. The first illustrated the percent of pupils in the State who obtained a given mark-point average and a given level of achievement on the ITED. The second presented the percent of pupils in the district who obtained a given mark-point average and a given level of ITED achievement, and the third gave the same information for the local school.

Several interpretations of the results of this table would be possible. First, the percent distributions in the rows would indicate the efficacy of either the ITED to reflect school achievement or school achievement to reflect ITED-measured achievement. Each column would summarize the percent of pupils obtaining a given level on the ITED at each organization level (State, district, and local) and perhaps suggest degrees to which local mark distributions are similar to those found statewide as measured by an independent measure of achievement (ITED). Second, given confidence in the ITED as an accurate measure of achievement, it may draw inferences about the number of pupils who have not achieved course marks commensurate with their true achievement. This may suggest investigation of pupils whose discrepancy between course marks and ITED achievement is large.

Comparisons of educational plans and first semester mark-point averages for 10th, 11th, and 12th graders were outlined in table form also. The percent of pupils planning on any designated post-high school education for any given level of achievement (as measured by marks earned during the first semester) may be obtained. Further, these are illustrated for the State, district, and local school. The percents in each cell represented the percent of the pupils of that letter grade who plan to attain the designated educational level (listed were high school graduation, vocational school, junior college, college, post-graduate).

These tables find use in evaluating the soundness of educational planning among pupils at any given high school (given due consideration to local mark policies, economic conditions, etc.). If a particular school knows how many A's, B's, etc., were given, the number of pupils planning on the various levels of education may be computed.

Four suggested output forms--a Record of Courses Plus Marks, a Pupil Identification Card, an Individual Student Information Sheet, and a Pupil Roster--were discussed at length. All but the Identification Card were incorporated into the system, although changes were made after a thorough preliminary investigation of the formats.

The Record of Courses Plus Marks, as suggested, would include the semester designation, pupil's name, times absent, times tardy, grade level, courses, teacher, marks, units value, semester mark-point average, cumulative MPA, and cumulative units.

The Pupil Identification Card, as proposed, included the school district name, school name, date, school number, pupil's name, grade, address, city and State, birth date, telephone number, and ID number.

The Individual Student Information Sheet (later designated as the Student Data Summary Sheet) contained the pupil's name, ID number, address, parent or guardian's name, sex, grade, age, birth date, date of record, city, State, telephone number, educational level sought, mark-point average and cumulative mark-point average, ITED scores, marital status of parents, occupational aspirations, and study habits.

As proposed, the Pupil Roster included the school district name, school name, grade, room number, pupil's name, birth date, sex, parent or guardian, relationship (parent or otherwise), address, city, State, and telephone number. As adopted, the Pupil Roster (or Student Directory as it was later designated) included each of these items plus the pupil's identification number and educational classification (regular or special). The definition of "special education" as used in Iowa is as follows: "An educational program designed for exceptional children or those who deviate from the average in physical, social, or mental characteristics to such an extent that they are unable to profit from the conventional school program and require special provisions for their care, education, and development."

Change to Statewide System

The proposal to the U. S. Office of education contemplated only the field testing of procedures in a large representative sample of schools. As the work progressed, it became evident that a crucial part of the problem of large-scale systems development would be the actual implementation of the system on a statewide basis. It was decided, therefore, to install the system in all public secondary schools in the State in order that all of these problems could be studied.

The results of the decision to install the system in all public secondary schools instead of a sample are many. The Information Center found that orientation of local district personnel was a major part of any significant change in procedures. Much more care must go into instructional material and written procedures. Many different procedures are used in local districts for collecting and handling information, and many different organizational patterns exist in the secondary schools. If a system was to be usable on a statewide basis, it must take all of these various patterns and procedures into account; otherwise, it would not serve the needs of all.

Certain objectives of a statewide system could not be tested with a sample. The preparation of State summaries of data normally collected manually could not be compared with older methods. Stratified samples for research purposes could not be useful unless the entire population of pupils is included in the system.

The transfer of records from one school to another for longitudinal studies cannot be done unless all schools are included in the data bank.

Because of these important reasons, it was felt that the test should be made on the entire public secondary school population. The additional work created a serious problem, but it was felt the decision was a wise one to make. A valuable by-product of the effort not anticipated at the time was the possibility of having statewide information prior to the implementation of the Elementary and Secondary Education Act of 1965. These base data were considered to be extremely valuable in evaluating programs established under the act.

Stenciling, Gridding Pilot Tests

Pilot tests were made of the stencil card method of preparing input. The tests were very successful in grades 3 through 12. Primary children exhibited some difficulty in keeping the cards aligned for stenciling.

This created no problem at the time since the primary schools were not to be included in the May, 1965, administration of CardPac and plans were made to develop other approaches for primary use in the future.

Preliminary analysis of stenciling ID numbers on pupil cards at Keokuk by 720 pupils of average ability level indicated 45% errors at the 1st grade level, 36% at 2nd, 9.6% at 3rd, 3.4% at 4th, and no errors in the 6th, 9th, and 11th grades. A preliminary analysis of the pupil gridding procedure test at Fairfield indicated a higher percentage of errors than occurred in the stenciling test.

Questionnaire Field Test

A field test of the proposed 73-item pupil questionnaire was administered at West Branch to 408 pupils in grades 7-12 February 25, 1965. The test was closely documented.

The purpose of the trial administration was to test the appropriateness of individual items (were the items understandable, answerable, confusing, etc.?), the time for administering the questionnaire, and to test the clarity of the instructions. Other objectives were to obtain photographic records of pupils completing questionnaires and proctors administering them, and impressions of the pupils concerning their feelings about completing the questionnaire (prying, use of items, items which need improvement, etc.).

During the entire time pupils were taking the questionnaire, two or more proctors (IEIC personnel) circulated among the pupils, giving aid where requested. The specific type of aid given was noted on a comment page; in this manner items of greatest difficulty for the pupils were identified.

Flash photographs taken of the pupils and proctors distracted some seniors, later conversations with the seniors disclosed. It had not been announced that pictures were to be taken.

Questionnaires were administered to entire grades, the order of administration being 12, 11, 10, 9, 8, and 7. Three different persons administered the directions, the first taking two grades, the next taking two grades, etc.

Two different procedures were used to close the questionnaire sessions. Some groups were asked to wait until all pupils had completed the questionnaire before they were handed in. In other groups the pupils were allowed to bring their questionnaires to the front and deposit them in stacks as soon as they had completed them.

A tabulation was made of the data collected for each item and each response by grade level and the percentage of pupils making each response computed. These results were used to make recommendations concerning adaptation or change or deletion of items and responses.

Overall evaluation of the directions revealed that they were adequate to get the pupils started on the questionnaire. After the administration, senior high pupils suggested that pupils should have been given more details concerning how the questionnaire is to be used and what benefit it will be to the pupil. It was also indicated that emphasis was needed on the point that pupils were to select the one best answer, even though several answers may have been possible.

Questionnaire Slanted?

Conversation with the pupils after the questionnaire was administered reflected no antagonism. One observation made by the pupils was that the questionnaire seemed to be slanted toward pupils planning to attend college. It was felt by the pupils with this sentiment that more items should be included concerning pupils who do not intend to go on to college. Pupils also felt that some questions were ambiguous, particularly those asking for responses using "extremely." "very," "somewhat," etc.

The time needed for reading the directions to the questionnaire remained constant for each group (four minutes). The 6 grade levels averaged 36 minutes in completing the questionnaire, ranging from 32 minutes in the 11th grade to 42 minutes in the 7th grade.

In analyzing responses to the questionnaire, it was noted that many errors occurred when pupils changed response patterns from double marks to single marks. Because of this it was recommended that all responses be marked by a double mark, thus reducing the chance for errors in marking.

Questionnaire Changes Needed

The pilot test showed that several changes were needed in items, both in format and content.

It was suggested by the Information Center personnel conducting the pilot test that the feedback of questionnaire data be in a form that is most usable by the school and at the same time taking the least amount of machine and printing time to produce. It was recommended that data be fed back item by item, summarizing the number and percent of pupils responding to each item foil. In addition a total response for each item foil would be included as well as the number and percent of errors and the number of no responses for each item. Each school completing the questionnaire would receive a full report. The forms for this report could be preprinted and the items, responses, and tabulations of number and percent of responses would be written into a computer program.

Final revisions of the questionnaire, collection instruments, instruction manuals, and CardPac tabloid copy were completed and reviewed for final approval by the State Department of Public Instruction, then sent to the printers. A four-page tabloid was to be taken home by each pupil so that parents could become familiar with the procedures and goals of CardPac.

Master Course List

To bring course data into the system, principals were first asked to fill out a Master Course List (Figure 1), which they were sent February 19, 1965, under the signature of the State Superintendent of Public Instruction. A followup letter to superintendents dated March 11 asked for immediate compliance with the earlier letter if principals had not already returned their completed Master Course List:

Different Lists were sent to the schools, depending on the organizational structure--7-8, 7-8-9, or 9-10-11-12. The Master Course List for the schools with a 7-8 structure was added after an oversight: The lists were originally designated only for 7-8-9 and 9-10-11-12 organizations.

Only a bare minimum of course information was collected in the initial administration of the system as shown in Figure 1.

Figure 1
MASTER COURSE LIST, FIRST ADMINISTRATION
(for grades 7-8)

IEIC COURSE TITLE	Sec.
0730 Typing, Gr. 7 -	☐
0731 Typing, Gr. 8 -	☐
0742 Personal Typing	☐
1130 Compos. Gr. 7 -	☐
1131 Compos. Gr. 8 -	☐
1230 Dram., Gr. 7 -	☐
1231 Dram., Gr. 8 -	☐
1330 English, Gr. 7 -	☐
1331 English, Gr. 8 -	☐
1390 Remedial Eng. -	☐
1430 Penman. Gr. 7 -	☐

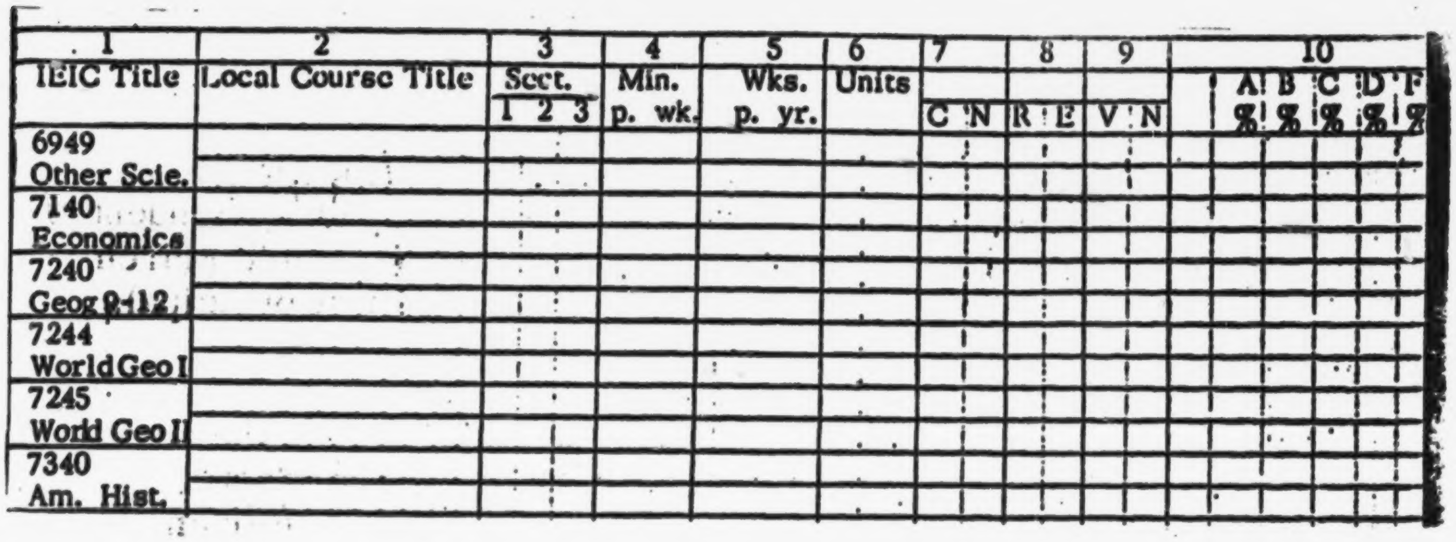
IEIC COURSE TITLE	Sec.
5130 Health, Gr. 7 ----	☐
5131 Health, Gr. 8 ------	☐
5132 Health, Gr. 7&8 -----	☐
5230 Boys' PE, Gr. 7 -----	☐
5231 Boys' PE, Gr. 8 ------	☐
5232 Boys' PE, Gr. 7&8 -----	☐
5330 Girls' PE, Gr. 7 ------	☐
5331 Girls' PE, Gr. 8 ------	☐
5332 Girls' PE, Gr. 7&8 ----	☐
5430 Phys Ed, B&G, Gr. 7 --	☐
5431 Phys Ed, B&G, Gr. 8 --	☐
5432 Phys Ed, B&G Gr. 7&8 -	☐

IEIC COURSE TITLE	Sec.
8537 Drafting, Gr. 8 ----	☐
8538 Drafting, Gr. 7&8 ---	☐
8539 Leather, Gr. 7, 8, or 7&8	☐
8630 Graphic Arts, Gr. 7 --	☐
8631 Graphic Arts, Gr. 8 ---	☐
8632 Graphic Arts, Gr. 7&8 --	☐
8633 Electircity, Gr. 7 ----	☐
8634 Electricity, Gr. 8 ---	☐
8635 Electricity, Gr. 7&8 --	☐
8636 Plastics, Gr. 7 ----	☐
8637 Plastics, Gr. 8 ----	☐
8638 Plastics, Gr. 7&8 ---	☐

The "IEIC Course Title" designations were taken from State Department of Public Instruction identifying codes.

The Master Course List was revised prior to the second administration of the information system in the fall of 1965, and as shown in Figure 2 more descriptive information was requested regarding individual courses.

Figure 2
MASTER COURSE LIST, SECOND ADMINISTRATION
(for Grades 9, 10, 11 & 12)



1	2	3			4	5	6	7		8		9		10					
IEIC Title	Local Course Title	Sect.			Min. p. wk.	Wks. p. yr.	Units								A %	B %	C %	D %	F %
		1	2	3				C	N	R	E	V	N						
6949 Other Scie.																			
7140 Economics																			
7240 Geog 9-12																			
7244 World Geo I																			
7245 World Geo II																			
7340 Am. Hist.																			

The "IEIC Title" column as shown in Figure 2 contained identifying course titles and numbers designated by the State Department of Public Instruction (changes and additions were made to the original list of State Department titles for purposes of clarification and to allow for more effective course designations). "Local course title" was asked to achieve uniformity in the State and local designations. Column 7 referred to a credit or non-credit course, column 8 to required or elective, and column 9 to vocational or non-vocational.

In addition to information requested as shown in Figure 2, all principals were asked to supply additional data on a Master Course Header Sheet: District name, county number, district number, school number, school name, principal's name, school address, school phone (including area code), city, zip code, organization pattern (8-4, 6-3-3, 6-2-4, 6-6, other), and estimated enrollment. Principals also were asked preferences regarding a general information meeting if they had already attended a district orientation meeting on the information system. They were asked to indicate the sequence they would prefer for attendance cards--alphabetical by name within grade or alphabetical by name within CardPac room. Other questions: Do you offer a summary mark at the end of the first semester for a course offered the full school year? Do you issue A/B/C/D/F marks? If yes, record the mark weights you give in your school (specific exceptions such as Honors English are to be listed by that specific course on the Master Course List). Do you issue percent marks? If yes, record the lowest letter conversion of these percents. The principals were told that other marks such as U and S would be provided for on the CardPac mark sheet to be completed at the end of each semester.

Also requested was the number of units required in each subject area listed: Agriculture, art, business education, communications, distributive education, driver education and safety, foreign languages, health, homemaking, industrial arts, mathematics, music, physical education, science, social studies, trade and industrial education. A unit is normally given for a subject meeting one period per day, five days a week, or the equivalent, for one year.

Orientation Meetings for Administrators

Plans for introduction of the information system statewide began with a one-hour briefing on the overall program for all superintendents having a secondary school in their district. Nineteen area meetings were conducted between February 9 and April 9; the meetings were scheduled to end sooner but blizzards forced some postponements.

Information Center personnel attended regular monthly meetings of area superintendents for many presentations. The dates and sites of the meetings: February 9, Holstein; February 10, Sioux City; February 24, Ottumwa; February 25, Burlington; March 9, Dubuque; March 10, Cedar Rapids; March 11, Bettendorf; March 12, Clear Lake; March 15, Graettinger; March 22, Fort Dodge; March 23, Waterloo; March 24, Calmar; March 25, Des Moines; March 26, Sheldon; March 29, Carroll and Marshalltown; March 30, Atlantic; April 6, Osceola; and April 9, Davenport.

Superintendents' Meetings

Presentations for the superintendents began with a flip-chart introduction showing the need for an information system and what it is; a slide narration probed the system in further detail; then the flip-charts were used again for review. A question-and-answer session followed, lasting from 30 minutes to up to an hour and a half. The superintendents also were told that their principals would be briefed at later all-day workshops.

The short, concise presentations were well received. It was the consensus of the teams who conducted the meetings that the decision to hold the meetings was a wise one and that the meetings went a long way to assure the cooperation of local administrators.

Principals' Meetings

The principals were given a day-long orientation after being informed of the all-day orientation meetings in a letter dated April 5, 1965. The letter informed them of material they must bring to the meetings--lists of teachers and courses--and also stressed the urgency of attending the meetings or having a representative there.

Audio-visual materials for the principals' presentations were prepared with great care. A thorough analysis of the elements of the CardPac information system indicated that the success of the system would rest largely in the hands of individual school principals, and that each of them must thoroughly understand certain basic principals and procedures if the effort was to succeed. Because all of the material had to be covered in six hours of class time, and because several teams would be covering the same material, a major effort was made in the preparation of materials. The objectives were clearly defined and limited to the necessary essentials. Visuals and scripts to accompany them were prepared with great care and carefully rehearsed with field teams. Much editing and re-editing was necessary to reduce the material so that it could be presented in six hours.

Final arrangements for the principals' meetings were completed through the Department of Public Instruction for the time, place, and staffing of the meetings. Arrangements were made for meeting places in local hotels and motels. In many instances considerable difficulty was experienced in obtaining adequate space and feeding arrangements in the local community. Earlier scheduling would have alleviated this problem.

Twelve of these principals' meetings were conducted beginning April 12 at the Information Center in Iowa City and ending April 30 in Des Moines. Considerable effort was made in each city to see that principals got to the right place at the right time.

The meetings began with a flip-chart presentation of the relationship between the Information Center, the University, the State Department of Public Instruction, and the principal. The presentation also included the organization and functions of the Information Center. A slide presentation introduced some principals of data processing with emphasis on the fact that data in machine-readable form can be read, printed, sorted, reproduced, correlated, and treated arithmetically, and with particular emphasis on the principle of interspersed gang punching or gang reading. Flip-charts stressing the need for a CardPac System were shown, followed by a slide presentation of what the actual administration would entail.

Simulated CardPac Run

Then the principals were divided into small groups for a simulated run of CardPac in the classroom with the principals assuming the role of pupils. The principals actually filled out the materials just as pupils would do in their CardPac rooms. Through this procedure the principals saw the system through the pupil's eyes and were able to anticipate questions they would get in their own schools.

Later, in these same small groups, the principals assumed their own administrative role. First, they were given a step-by-step review of the entire procedure for updating course and teacher lists, and they actually updated these lists.

The CardPac consultant then took the principals through the administration manual step by step, answering questions as they proceeded. The consultants impressed upon the principals the necessity of distributing the materials correctly, putting cards in the proper sequence, and packing them correctly. The principals also were told how to get more materials and what to do with extra materials.

Near the close of the meeting each principal filled out a form indicating the academic mark practices used in his school. Results of this survey later were published and fed back to the principals as a status study. The meeting was concluded with a slide presentation describing fall, 1965, CardPac procedures.

Excellent Turnout

A vigorous effort was made to get every principal to the meetings, and the response was excellent. Information Center officials knew who was to be at each meeting, providing a packet of materials for each participant. If the packet was not distributed at one meeting, the principal was contacted and urged to attend a later meeting. Most of the meetings were held in the same city two consecutive days, and this made it simpler for principals to make up an absence.

Six-hundred-ninety principals were invited to the meetings, and 609 attended. Thirty-eight did not attend but sent a representative; thirty-five others did not attend and did not send a representative but some other principal in the district attended. Only eight principals did not attend the meetings, did not have a representative at the meetings, and did not have some other principals from the same school district in attendance.

The extensive planning for these meetings proved invaluable. Comments from the groups clearly indicated that the presentation was appreciated, and time after time the teams were told by participants that the communication effort was the best they had ever had with the State Department of Public Instruction.

In May, prior to the administration of CardPac, two Information Center staff members responded to a call from the principal at Millersburg High School, who sought help in orienting his teachers. The two staff members went to the school and conducted a step-by-step orientation of CardPac with the faculty members, answering questions and discussing the future impact of this kind of program. The consultants felt this was well worth the time and expense, not only as a public relations gesture but also in giving both the high school staff and the Center personnel actual experience.

Internal Task Forces

So that concentrated efforts could be made on areas of immediate concern prior to and during the delivery of CardPac materials to the schools, several task forces were set up in early May with one staff member designated as a leader of each task force. The leader was given the responsibility for the progress and completion of work in his area.

Weekly progress reports were made by each task force leader, relating precisely the progress made in each project each week, as well as problems encountered and decisions made, and including forms, instructions, or manuals developed. The project designations included feedback from the initial administration of CardPac, CardPac plans for the fall of 1965, data bank storage and retrieval, and a cleanup of spring, 1965, CardPac details. The latter included answering questions from local schools concerning the administration of spring CardPac, furnishing additional materials when needed, an evaluation of the system, documentation of the development and initiation of the system, and documentation of the system itself.

Delivery of CardPac Materials

All manuals, cards, instructional material, and publicity releases were completed, a processing and delivery system set up, and the materials delivered to the schools in May, 1965. Measurement Research Center, which conducts mass programs of this sort for other projects, handled the packing. A parcel delivery service was chosen to distribute the materials.

Nearly 10,000,000 pages of printed material were mailed to the principals for the initial administration of the CardPac System. These included five data cards to be distributed to pupils (#1 Stencil Card, #2 Student Information Card, #3 Student Address Card, #4 Questionnaire

Answer Card, and #5 Course Card--8 copies of latter), two punched card forms to be distributed to teachers (#6 Course Header and #7 Teacher Header), a 32-page Principal's Manual, two-page Teacher's Instructions, eight-page Proctor's Instructions, two-page Teacher's Brochures, four-page Pupil Tabloid, and a 16-page Pupil Questionnaire (Appendix A). The Teacher's Instructions and Proctor's Instructions also were part of the Principal's Manual, but individual copies of the respective instructions were printed for each teacher and proctor. The data cards are shown in figures three through nine.

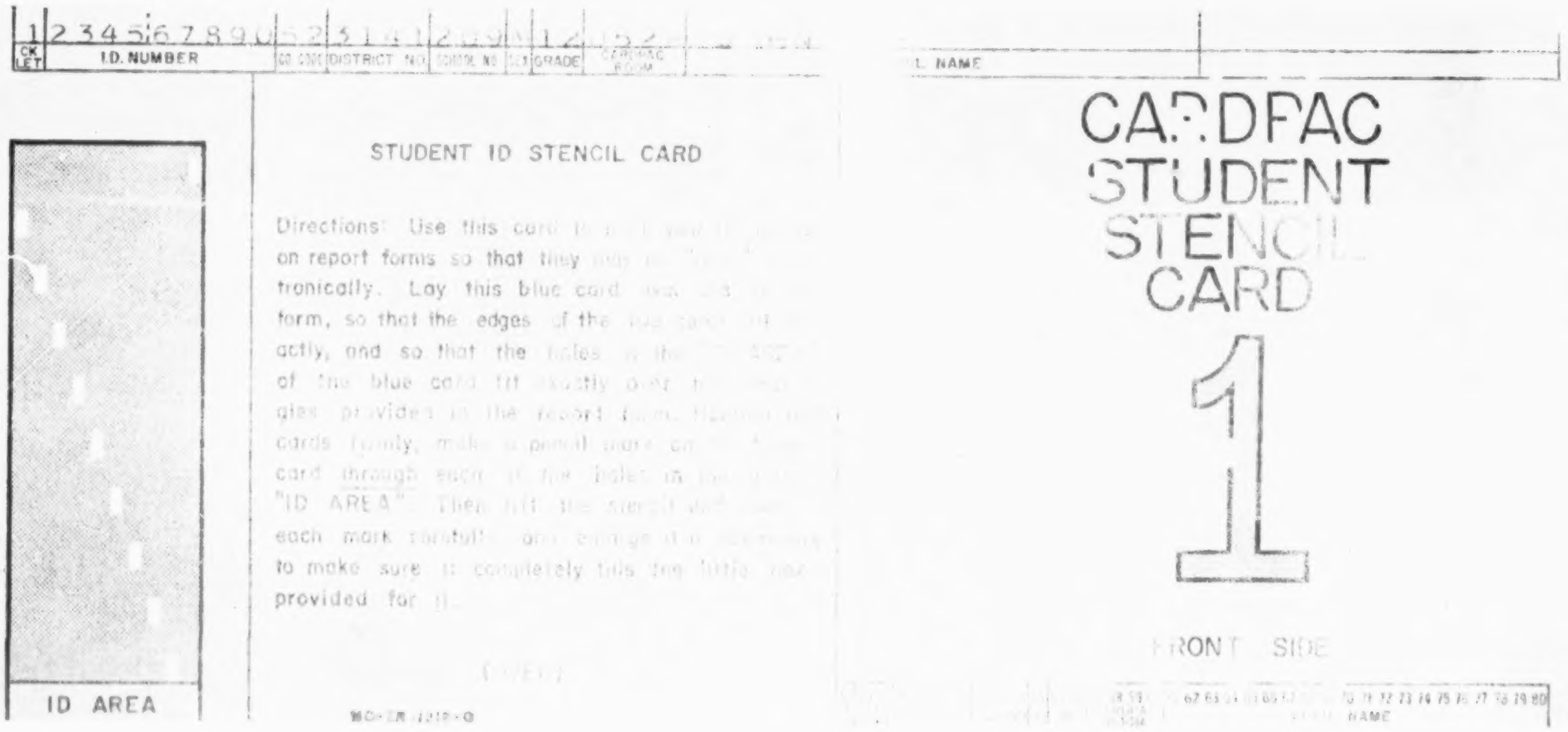
Principals were told to have each pupil take home to his parents the four-page tabloid describing the procedures and goals of the CardPac System. The tabloid included illustrations of the cards involved, cartoons involving computers, Charles Schulz "Peanuts" comic strips on teacher problems, a picture taken during the West Branch pilot test and accompanying story, and other articles designed to introduce the parents and pupils to CardPac. Some schools did not receive these tabloids and some pupils who had received the tabloids did not take them home.

Here is an actual count of the items mailed to the schools:

CARD FORMS	NO. OF ITEMS	
Card #1 - Stencil Card	250,000	
Card #2 - Student Information	250,000	
Card #3 - Student Address	250,000	
Card #4 - Questionnaire Answers	250,000	
Card #5 - Course Card	2,000,000	
Card #6 - Course Header Card	90,000	
Card #7 - Teacher Header Card	90,000	
Total Card Forms		3,180,000

PRINTED MATERIAL		
Principal's Manuals, 32 pp	2,500	
Teacher's Instructions, 2 pp	20,000	
Proctor's Instructions, 8 pp	20,000	
Teacher's Brochures, 2 pp	20,000	
Pupil Tabloids, 4 pp	250,000	
Pupil Questionnaires, 16 pp	250,000	
Total Printed Material Forms		562,500

Figure 3
STUDENT STENCIL CARD
(Front)



1 | 2 3 4 5 6 7 8 9 0 | 5 2 | 3 1 4 1 | 2 0 9 | 1 2 | 5 2

CK LET | I.D. NUMBER | CO. CODE | DISTRICT NO. | SCHOOL NO. | GRADE | CARDPAC ROOM

L NAME

STUDENT ID STENCIL CARD

Directions: Use this card to mark your ID number on report forms so that they may be [illegible] tronically. Lay this blue card over the report form, so that the edges of the two cards fit exactly, and so that the holes in the "ID AREA" of the blue card fit exactly over the rectangles provided in the report form. Holding both cards firmly, make a pencil mark on the report card through each of the holes in the "ID AREA". Then lift the stencil and blacken each mark carefully and enlarge it if necessary to make sure it completely fills the little rectangle provided for it.

(OVER)

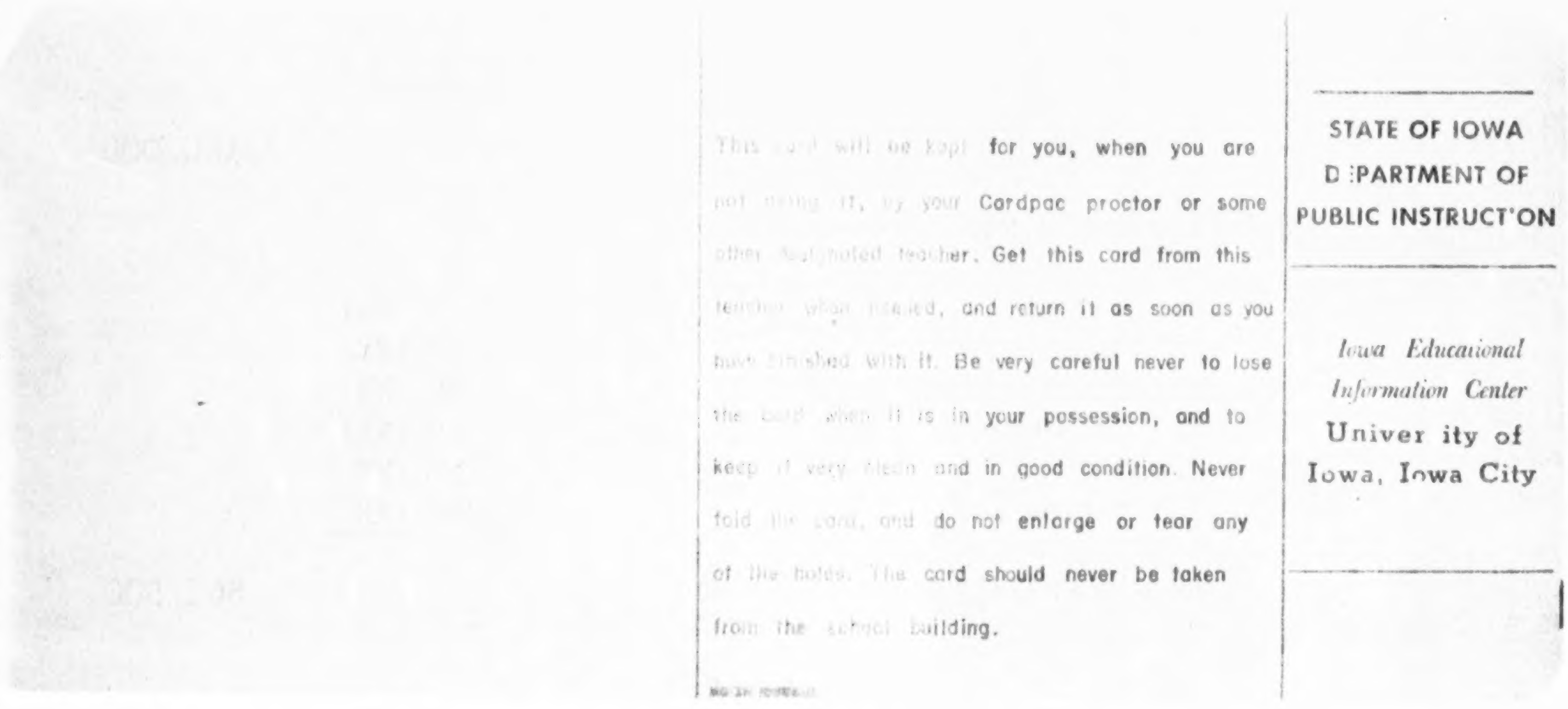
ID AREA

CARDPAC
STUDENT
STENCIL
CARD
1

FRONT SIDE

70 71 72 73 74 75 76 77 78 79 80
NAME

(Back)

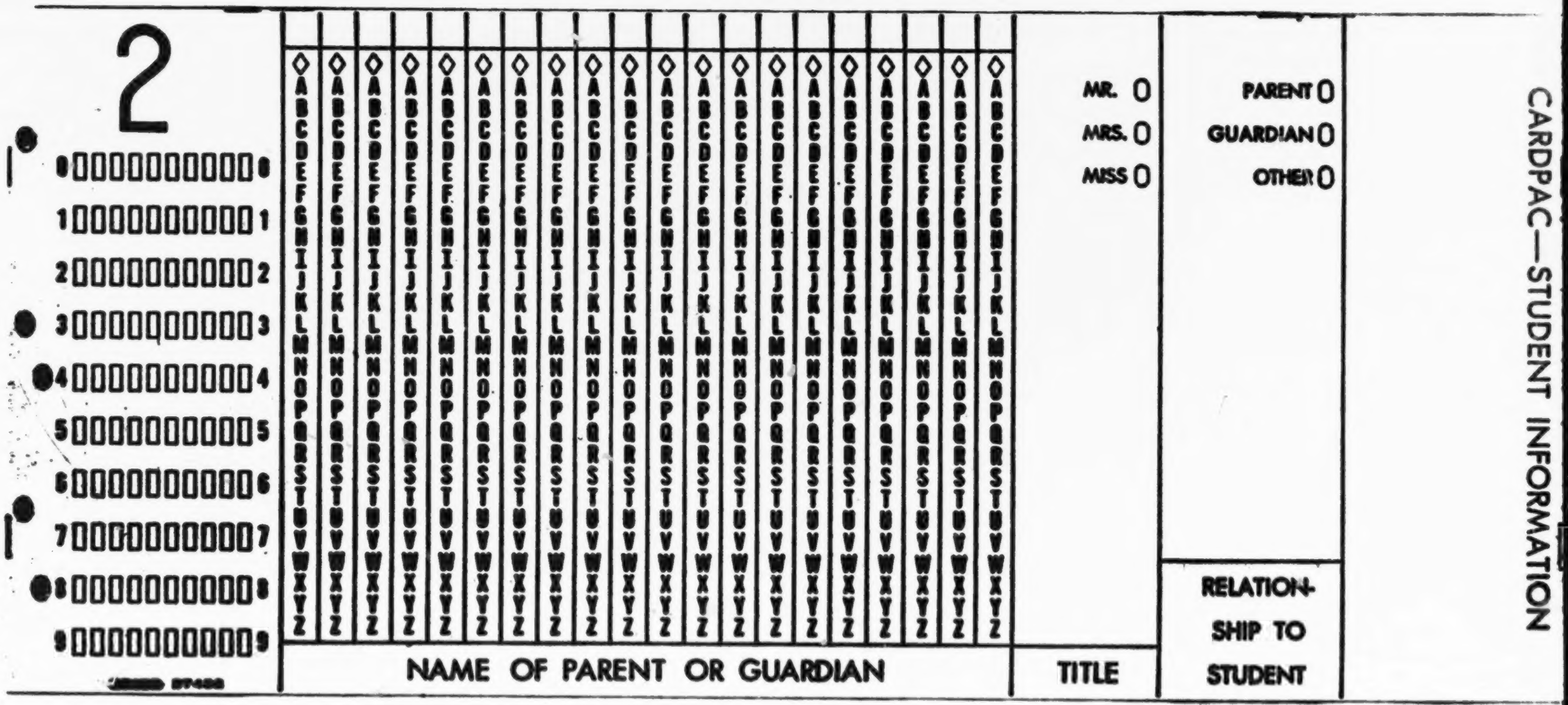


This card will be kept for you, when you are not using it, by your Cardpac proctor or some other designated teacher. Get this card from this teacher when needed, and return it as soon as you have finished with it. Be very careful never to lose the card when it is in your possession, and to keep it very clean and in good condition. Never fold the card, and do not enlarge or tear any of the holes. The card should never be taken from the school building.

STATE OF IOWA
DEPARTMENT OF
PUBLIC INSTRUCTION

Iowa Educational Information Center
University of
Iowa, Iowa City

Figure 4
STUDENT INFORMATION CARD
(Front)



2

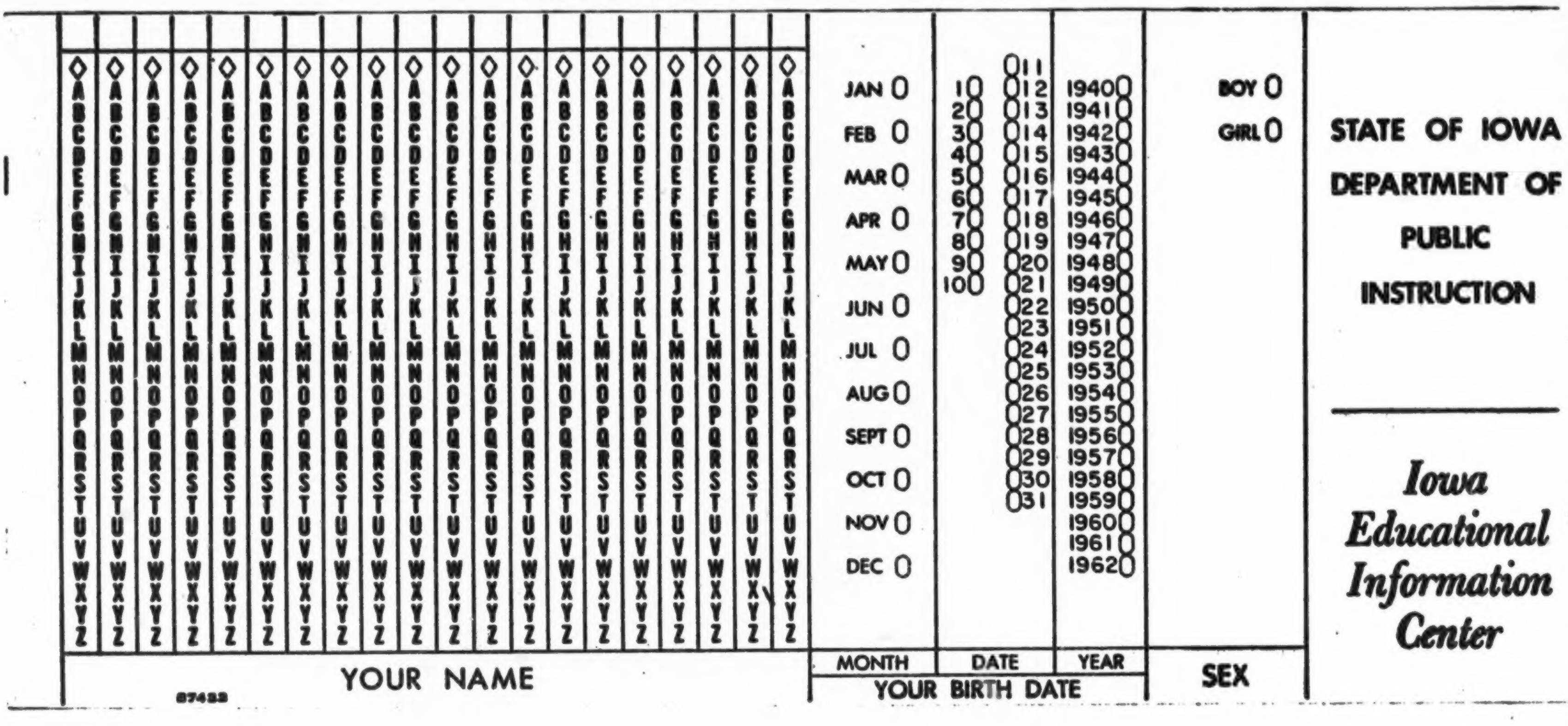
NAME OF PARENT OR GUARDIAN

TITLE
MR. ○
MRS. ○
MISS ○

RELATIONSHIP TO STUDENT
PARENT ○
GUARDIAN ○
OTHER ○

CARDPAC—STUDENT INFORMATION

(Back)



YOUR NAME

YOUR BIRTH DATE

MONTH
JAN ○
FEB ○
MAR ○
APR ○
MAY ○
JUN ○
JUL ○
AUG ○
SEPT ○
OCT ○
NOV ○
DEC ○

DATE
1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 ○
○ 11 ○ 12 ○ 13 ○ 14 ○ 15 ○ 16 ○ 17 ○ 18 ○ 19 ○ 20 ○ 21 ○ 22 ○ 23 ○ 24 ○ 25 ○ 26 ○ 27 ○ 28 ○ 29 ○ 30 ○ 31

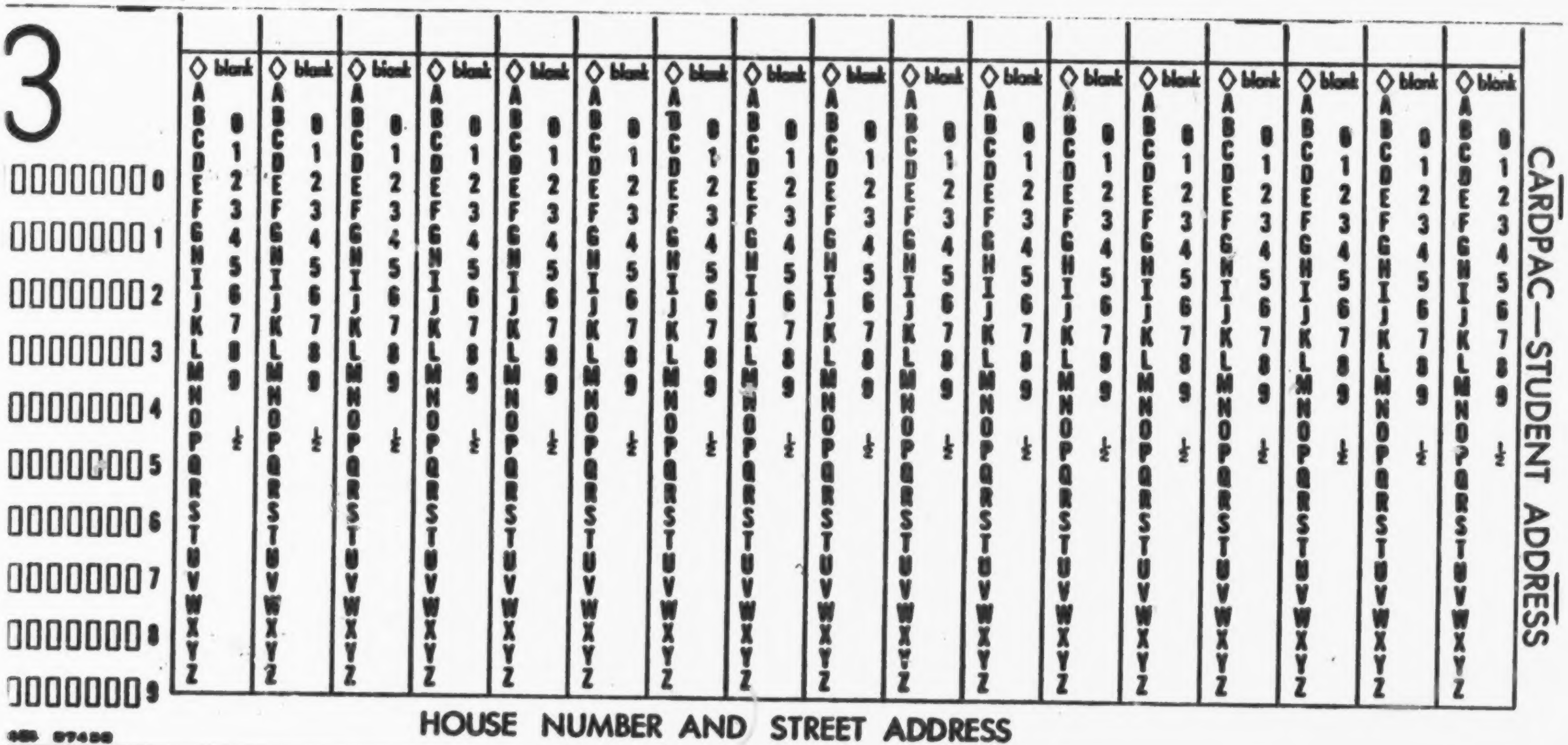
YEAR
1940 ○ 1941 ○ 1942 ○ 1943 ○ 1944 ○ 1945 ○ 1946 ○ 1947 ○ 1948 ○ 1949 ○ 1950 ○ 1951 ○ 1952 ○ 1953 ○ 1954 ○ 1955 ○ 1956 ○ 1957 ○ 1958 ○ 1959 ○ 1960 ○ 1961 ○ 1962 ○

SEX
BOY ○
GIRL ○

STATE OF IOWA
DEPARTMENT OF
PUBLIC
INSTRUCTION

Iowa
Educational
Information
Center

Figure 5
STUDENT ADDRESS CARD
(Front)


3
0 1 2 3 4 5 6 7 8 9
◇ blank
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
0 1 2 3 4 5 6 7 8 9 ½
CARDPAC—STUDENT ADDRESS
HOUSE NUMBER AND STREET ADDRESS

(Back)

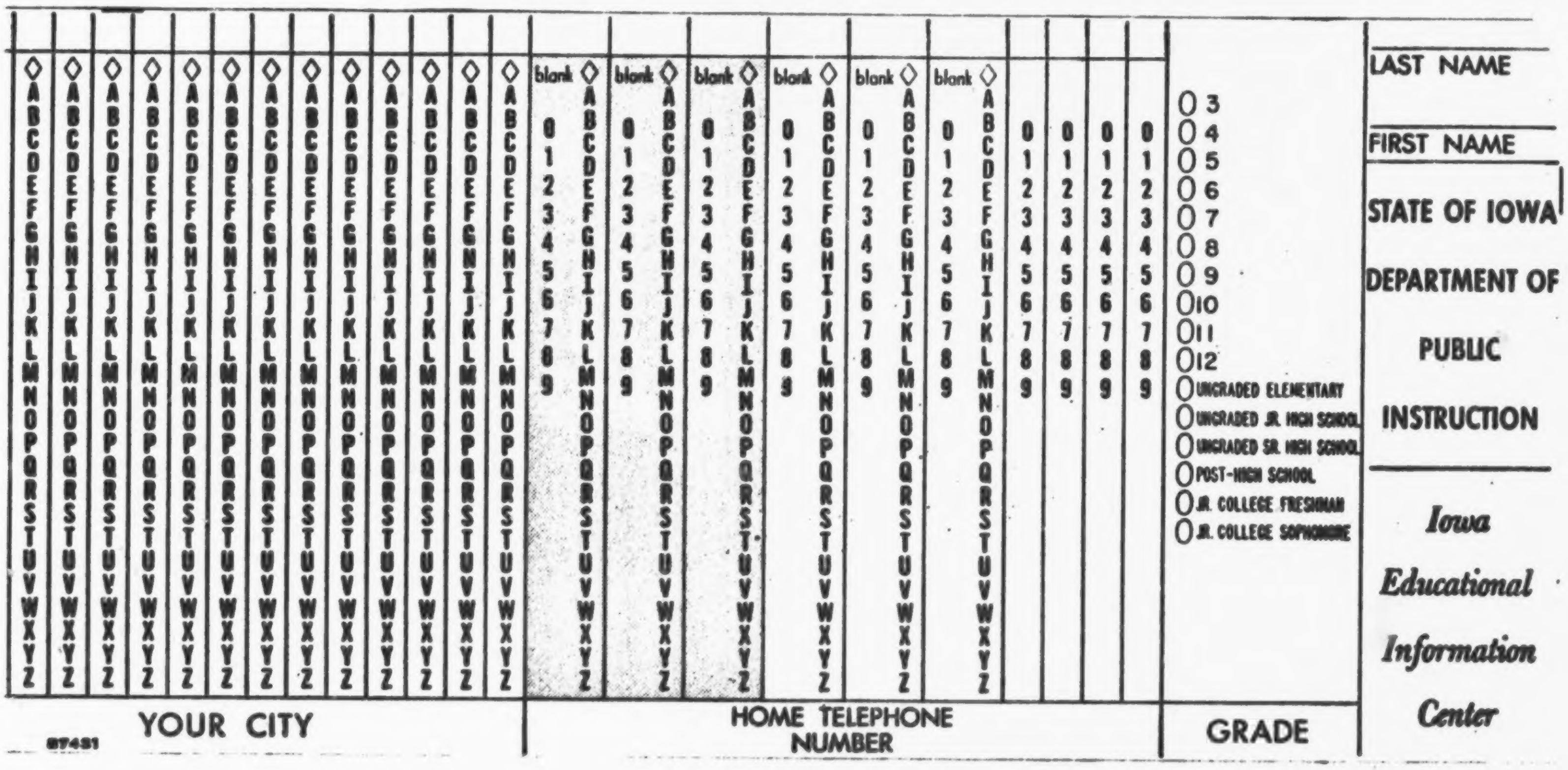
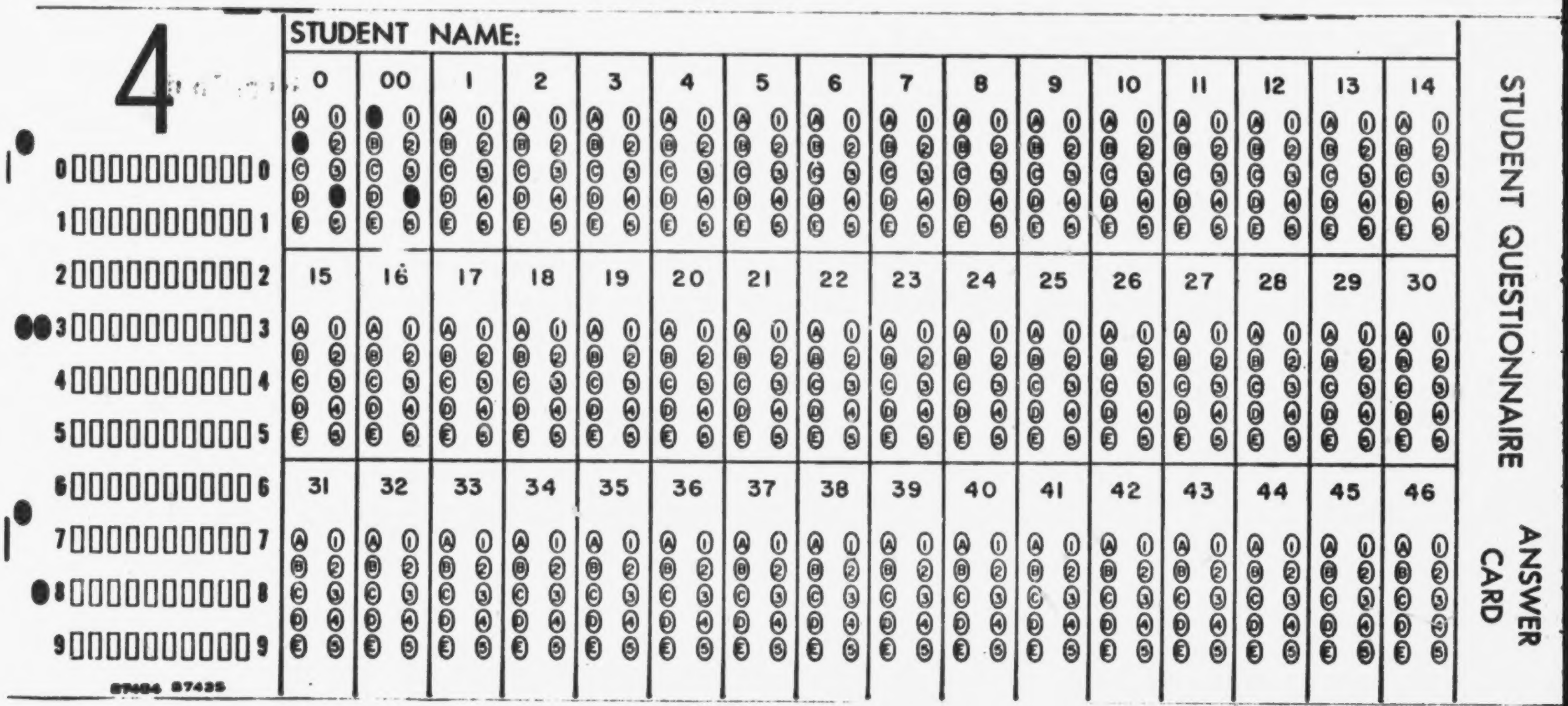

◇
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
blank
0 1 2 3 4 5 6 7 8 9
○ 3
○ 4
○ 5
○ 6
○ 7
○ 8
○ 9
○ 10
○ 11
○ 12
○ UNGRADED ELEMENTARY
○ UNGRADED JR. HIGH SCHOOL
○ UNGRADED SR. HIGH SCHOOL
○ POST-HIGH SCHOOL
○ JR. COLLEGE FRESHMAN
○ JR. COLLEGE SOPHOMORE
LAST NAME
FIRST NAME
STATE OF IOWA
DEPARTMENT OF
PUBLIC
INSTRUCTION
Iowa
Educational
Information
Center
87431
YOUR CITY
HOME TELEPHONE NUMBER
GRADE

Figure 6
STUDENT QUESTIONNAIRE ANSWER CARD
(Front)


4
STUDENT NAME:
0 00 1 2 3 4 5 6 7 8 9 10 11 12 13 14
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46
STUDENT QUESTIONNAIRE
ANSWER CARD
87434 87435

(Back)

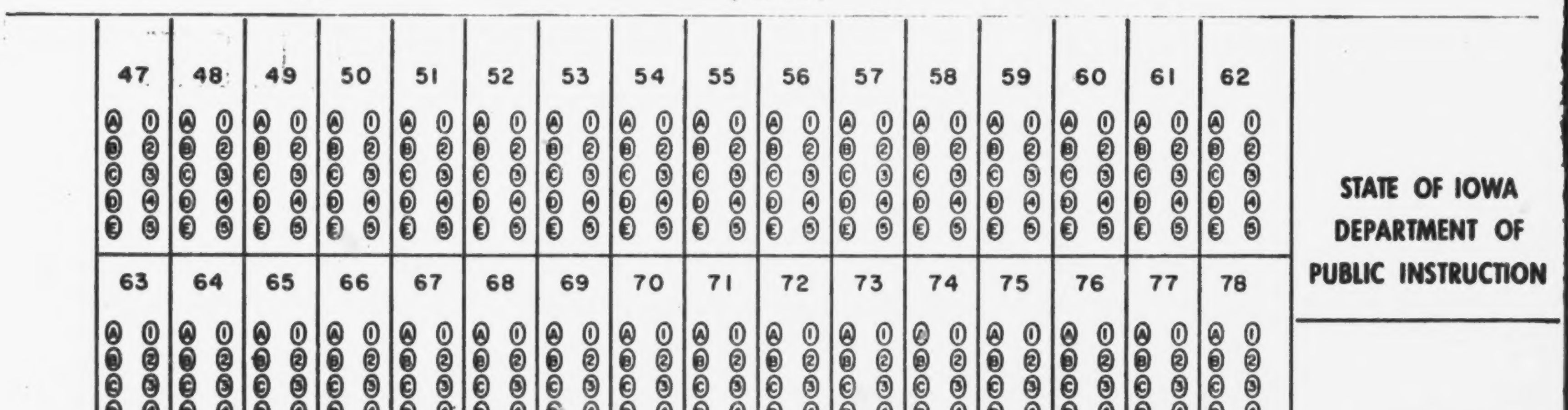
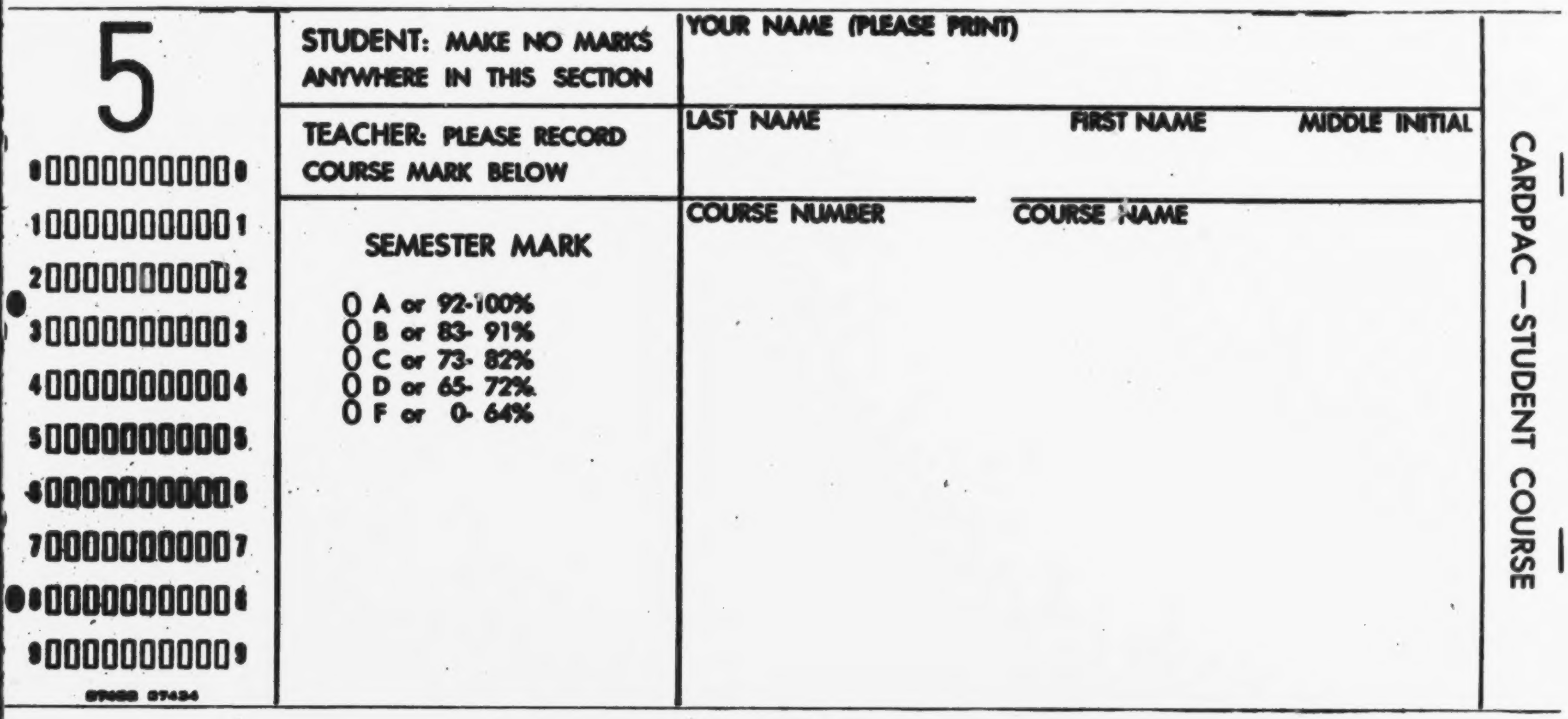

47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62
63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78
101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116
SCHOOL QUESTIONNAIRE STARTS HERE
STATE OF IOWA DEPARTMENT OF PUBLIC INSTRUCTION
Iowa Educational Information Center
87436

Figure 7
STUDENT COURSE CARD



5

STUDENT: MAKE NO MARKS ANYWHERE IN THIS SECTION

YOUR NAME (PLEASE PRINT)

TEACHER: PLEASE RECORD COURSE MARK BELOW

LAST NAME | FIRST NAME | MIDDLE INITIAL

COURSE NUMBER | COURSE NAME

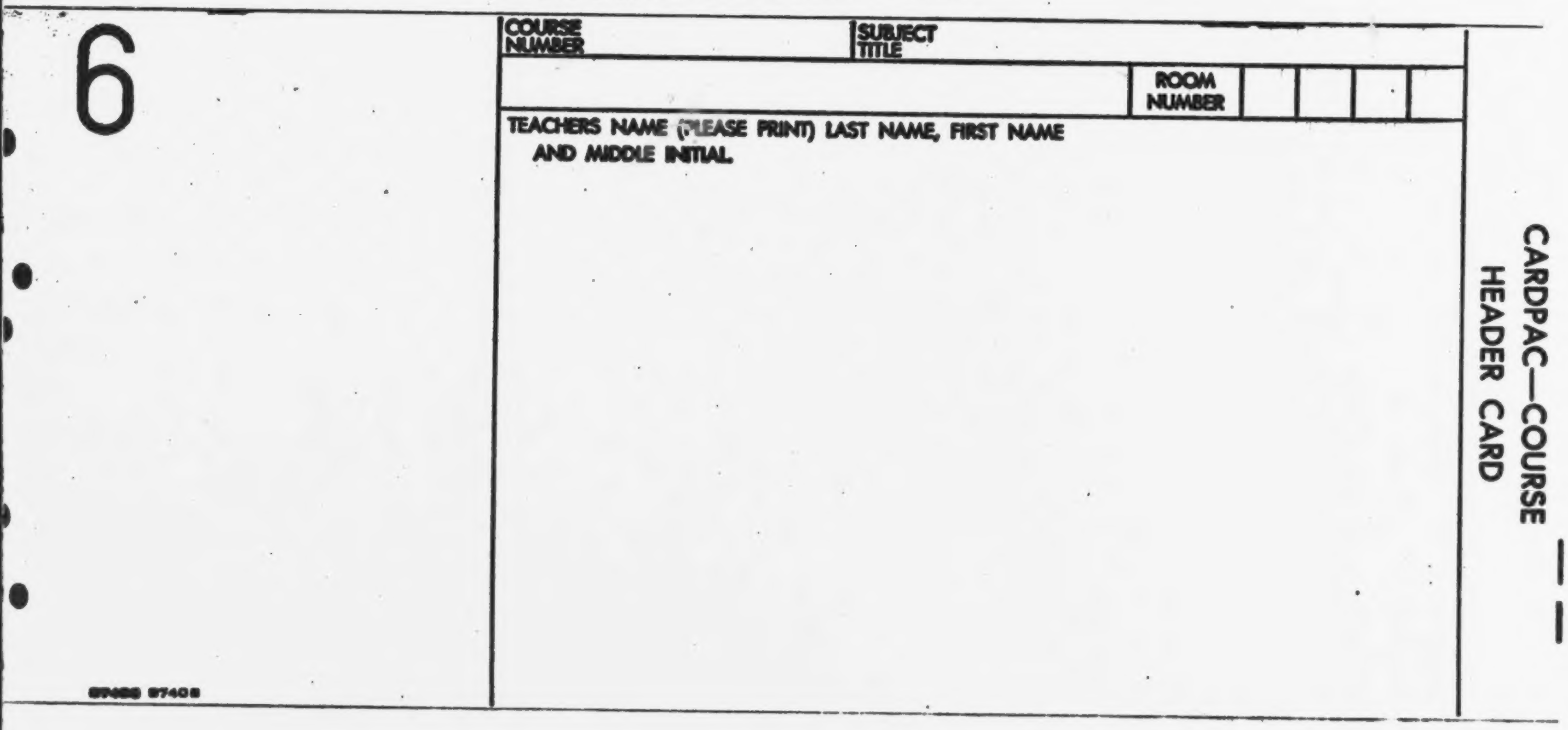
SEMESTER MARK

○ A or 92-100%
○ B or 83- 91%
○ C or 73- 82%
○ D or 65- 72%
○ F or 0- 64%

87488 87434

CARDPAC—STUDENT COURSE

Figure 8
COURSE HEADER CARD



6

COURSE NUMBER

SUBJECT TITLE

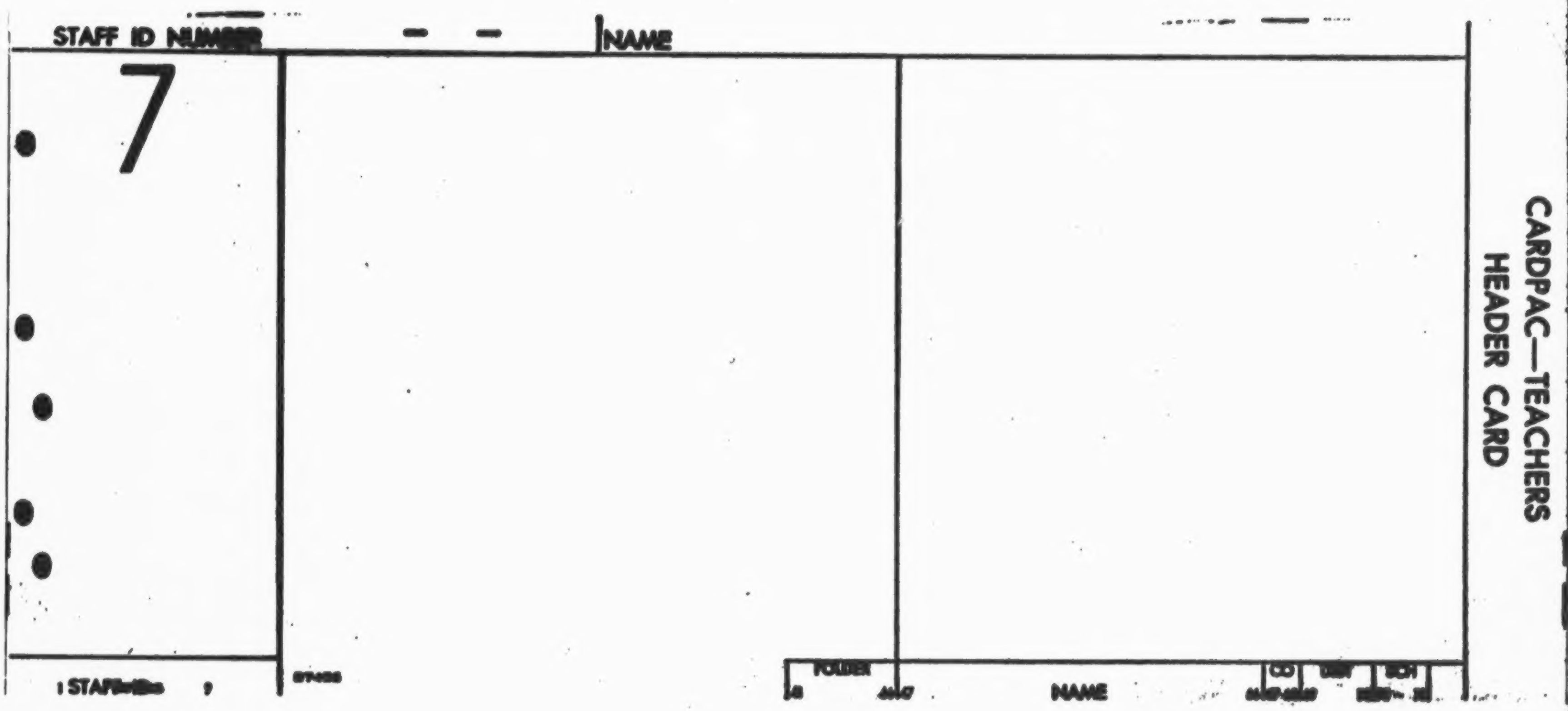
ROOM NUMBER

TEACHERS NAME (PLEASE PRINT) LAST NAME, FIRST NAME AND MIDDLE INITIAL

87488 87408

CARDPAC—COURSE HEADER CARD

Figure 9
TEACHER HEADER CARD


STAFF ID NUMBER
NAME
7
CARDPAC—TEACHERS
HEADER CARD
FOLDER
NAME
CO
DIST
SCH

OTHER SUPPLIES

CardPac Envelopes	250,000	
Card Containers for Shipping	1,500	
Packing Boxes	1,500	
Total Other Supplies		253,000
TOTAL ITEMS SENT TO SCHOOLS		3,995,000

Superintendents also received packets of everything distributed to the schools, plus a one-page release for local media. The superintendents were told "The Information Center will have released a general story on CardPac to the press services and the larger newspapers and broadcasting stations in Iowa by the time you receive your CardPac materials. Your CardPac materials include copies of a story which you might like to release to newspapers or broadcasting stations in your immediate area after filling in the date for CardPac administration, individual school name, and the approximate number of students in the school who will participate in CardPac. We also suggest that you provide your local media with copies of The CardPac News--the tabloid-size student newspaper--which should answer most of their questions about the overall administration of the CardPac System. Local media have full permission to reprint or quote from any of the material in The CardPac News with the exception of the 'Peanuts' comic strips which are the copyrighted property of United Feature Syndicate, Inc."

The general news story sent to [illegible]5 large newspapers and radio and television stations was three pages in length. It described the CardPac System, why it was developed, what it hopes to do, data to be collected, and the procedures, forms, and the electronic data processing machines involved.

Media receiving the release included The Iowa City Daily Iowan, The Iowa City Press-Citizen, United Press of Des Moines, The Des Moines Register, Davenport Times-Democrat, Dubuque Telegraph Herald, Sioux City Journal, Omaha World Herald, Associated Press of Des Moines, Cedar Rapids Gazette, Des Moines Tribune, Burlington Hawk-Eye, Council Bluffs Nonpareil, WHO AM/TV of Des Moines, WMT AM/TV of Cedar Rapids, WSUI Radio of Iowa City, KBUR Radio of Burlington, WOC AM/TV of Davenport, KRCB Radio of Council Bluffs, KVTV-TV of Sioux City, KXIC Radio of Iowa City, KRNT AM/TV of Des Moines, KCRG AM/TV of Cedar Rapids, KTIV-TV of Sioux City. No record was kept as to how extensively the release was used.

Instructions to school personnel for the initial administration of the CardPac System of Educational Accounting in May, 1965, were presented in a 32-page Principal's Manual. Portions of this manual--the Classroom Teacher's Instructions and Proctor's Instructions--were reproduced for teachers and proctors who were responsible for actual classroom procedures.

Principal's Manual

The Principal's Manual is reproduced here in full as the best available guide to actual classroom procedures.

PREFACE

In order to fulfill its varied educational functions, the Iowa State Department of Public Instruction needs a diversity of accurate and timely data from Iowa schools. The difficulties associated with schools reporting this varied information to the Department as well as to other agencies is recognized. We also realize the importance of providing for or "feeding back" to local districts meaningful summaries and analyses of this data that will assist them in improving their local programs.

The CardPac system that is explained in this booklet has been developed to accomplish the following:

a) Provide a comprehensive vehicle to gather data needed by this agency.

b) Simplify and consolidate reporting procedures for local school personnel.

c) Provide the most useful analyses and summaries of this data that is possible.

I appreciate your cooperation and assistance in administering CardPac in your school. Your efforts will be rewarded through better education for all Iowa school children.

PAUL F. JOHNSTON, Superintendent
Department of Public Instruction

INTRODUCTION

Throughout the nation, public schools are faced with the need to compile increasing amounts of information, both for governmental agencies and for their own use. To assist the Iowa schools in this task, the Iowa Educational Information Center has devised a new system of data collection which should materially lighten the clerical burden of reporting heretofore imposed upon educators. This system is called CardPac. While developed at the request of the State Department of Public Instruction and authorized by it, the system is being administered by the Information Center at the University of Iowa in Iowa City. Participation by all public schools is mandatory, since the system replaces former procedures and forms for reporting to the State Department.

The system consists, quite literally, of "packs of cards," designed so that the information recorded on them can be transcribed to tape by electronic scanners. The taped data can then be organized and summarized by high-speed computers and printed out in a variety of convenient report forms. All the information submitted by a given school will be reported back to it, along with state summaries. Information needed by the State Department will be sent directly to it from the Center without any further effort by the schools. The complete tapes will then be stored at the Center, updated periodically, and used in filling later requests for other reports or services to the schools.

This year, the information collected will consist primarily of such educational statistics as: enrollments, teacher load data, curriculum details, student marks, etc. Necessary identifying information for each student -name, address, birth date, parent's name, etc. -and for teaching staffs will be recorded. A brief questionnaire, sampling academic interests, extracurricular activities, and other quasi-personal matters, will be answered by each student. In addition to the initial feedback of data to the schools, numerous other services are available or under development. These include class sectioning, mark reporting, cumulative record keeping, compilation of school directories, provision of individual student reports useful in guidance, student body analyses helpful in evaluation of school progress, and so on.

Certain features make the CardPac system easy for teachers and principals. First, students prepare their own reports with the materials administered under supervision on a group basis. Second, the process is largely limited to the marking of items in checklists printed on the cards. In general each item of information requires only a single mark on a card. Third, with few exceptions, no code numbers need be looked up in code lists or copied onto report forms. Fourth, the materials are divided into relatively small units, so that changes or corrections can easily be made. Fifth, prepunched and preprinted "header" cards are provided for assembly with the marked detail cards. These prepared headers eliminate the need for teachers to enter identifications (e.g., name of building, course, or teacher) repeatedly on various forms. These features contribute to accuracy in the recording of information, while electronic processing improves the accuracy of tabulation, analysis, and reporting.

INITIATION OF THE SYSTEM

The CardPac System is being initiated in Iowa secondary schools this spring. Eventually, it will be expanded to include the elementary schools. This manual has been prepared to assist the principal in administering the system in his school.

The CardPac materials needed will be distributed to the schools early in May. The completed forms will be returned by the schools to the processing center in Iowa City as soon as possible after the close of the semester, but no later than June 15.

CARDPAC MATERIALS

Early in May, each Iowa public secondary school principal will receive the CardPac materials for his school. The following items will be delivered in a single shipment.

1. Student Stencil Cards. These cards contain prepunched student ID numbers. The students will use these cards to stencil their ID numbers on the other card forms. There are two types of stencil cards, Assigned and Unassigned, as described below. Some schools will receive only the latter, but most schools will receive both kinds.

    a) Assigned Student Stencil Cards are supplied for students who have participated in the Iowa Tests of Basic Skills and Iowa Tests of Educational Development this year and for whom the Information Center thus already has on file name and ID number, grade, county, district, and school number. This information is both preprinted and prepunched in the assigned stencil cards. The cards will be arranged alphabetically within grades. They will be accompanied by a Principal's List of Assigned Student Stencil Cards, identifying students with their assigned ID numbers.

    b) Unassigned Student Stencil Cards are supplied for all other students. These cards are prepunched with a student ID number and county and district numbers, but carry no name or grade. They are to be distributed to students who have not yet been assigned an ID number from the Iowa Test of Basic Skills or Iowa Test of Educational Development. The unassigned cards will come arranged in numeric sequence by ID number.

2. Basic Student CardPacs. These are envelopes containing 12 student data cards. One such CardPac is supplied for each student. The cards in each pack are:

a) Student Information Card. On this card, the student will record biographical facts, such as his name, date of birth, sex, name of parent, and so on.

b) Sample Student Address Card. This illustrates how the student is to fill in his own address card.

c) Student Address Card. On this card the student will record his mailing address, phone number, and grade.

d) Student Questionnaire Answer Card. The student will record on this card his answers to a questionnaire.

e) Student Course Cards. There are eight of these cards in each CardPac envelope. The student will enter his name, ID number, and course name on one of these cards for each subject he is taking and will distribute the cards to his teachers, who will mark his semester grades on the cards at the end of the year.

3. Extra Student Course Cards. Junior high schools are provided with one extra course card for each student. Senior high schools will not receive extra course cards.

4. Teacher Header Cards. These will be assembled with the student course cards for purposes of identification and machine control. Each teacher will need one such card for each section of each course taught. There are two types of these cards:

   a) Assigned Teacher Header Cards. These cards are provided for each teacher who completed an Iowa Professional School Employees Data Sheet last fall. For each teacher, there will be at least one of these cards for each section of each course taught. The teacher's name and number are punched in the card and printed across the top. These cards are arranged in alphabetic sequence, and are accompanied by a List of Assigned Teacher Header Cards. This lists the names of the teachers for whom Assigned Teacher Header Cards are furnished and indicates the number of cards included for each teacher.

   b) Unassigned Teacher Header Cards. These contain no teacher number or name. They are to be used by teachers who do not receive assigned header cards, or to replace lost or damaged cards.

5. Course Header Cards. These also will be used to identify packs of student course cards. One will be needed for each section of each course taught. Again, there are two types:

    a) Assigned Course Header Cards, produced from the Master Course Sheet submitted by the school in February. The course name and the course and section number are prepunched and preprinted. The first three digits are the course number and the last two the section number. The section numbers are assigned sequentially. For example, if you indicated that you are teaching three sections of English, numbered 105, the numbers 105-01, 105-02, and 105-03 were assigned.

    b) Unassigned Course Header Cards, blank cards for use whenever an assigned card is not available for a course or section.

6. Student Questionnaires. One copy is supplied for each student in the school. Students will respond to the questionnaire by marking their answers on the Questionnaire Answer Card in the CardPac.

7. Proctor's Instructions. These are instructions for the administration of the CardPac materials to the students. Staff members administering CardPac to groups of students are called Proctors. Sufficient copies are supplied so that each Proctor administering CardPac to a group of students may have one. A copy is also included in the Appendix at the end of this manual.

8. Classroom Teacher's Instructions. These are to guide the classroom teachers in handling the Teacher and Course Header Cards and the Student Course Cards. One copy will be furnished for each classroom teacher in the school. A copy is also included in the Appendix of this manual.

9. School Header Cards. These cards, for school identification, are to be filled in by the principal and returned with the completed CardPac materials.

10. Stencil Divider Cards. For junior high schools only. When student stencil cards are returned to IEIC, they will be grouped according to probable location of the students next year. Stencil Divider Cards will be used to separate and identify each group of stencil cards.

11. Card Dividers. When the CardPac materials are returned to IEIC, these cards will be used to divide different types of cards packaged in the boxes.

12. CardPac Brochures. These briefly illustrate the entire CardPac procedure for this spring and may be used by the principal in explaining CardPac procedures to his faculty. One of these will be furnished for each teacher in the school.

13. CardPac Newspapers. These are to be distributed to students and faculty as an aid in understanding the CardPac process.

14. Principal's Manual.

STEPS PRIOR TO THE ACTUAL ADMINISTRATION OF CARDPAC

The principal must see that the following steps are taken in order to prepare his school for the actual administration of CardPac:

(1) Check the CardPac Materials for Completeness. The principal is asked to check the contents of his CardPac shipment as soon as possible after its arrival, and to report promptly any shortages or mistakes in packing, so that corrections can be made without delay. All communications regarding the materials should be addressed to the Information Center in Iowa City. All shipping cartons should be saved for later reuse in returning the materials to Iowa City.

(2) Establish CardPac Groups. The CardPac system requires that the students be organized into groups, with each group under the supervision of a staff member. For this purpose the principal may use whatever groups are most convenient. Previously organized groups such as homerooms, first period classes, or classes in a particular subject in which all students are enrolled, such as English, may be used, or special groups may be set up in designated rooms. Whatever grouping method is used, each such group of students is referred to in this manual as a "CardPac Group." The teachers who will supervise the administration of the material to each group are called "CardPac Proctors."

(3) Assign a Proctor to Each CardPac Group. If existing groups are used, the regular teachers assigned to those groups can serve as proctors. If not, proctors must be specially designated.

(4) Choose a CardPac Administration Day. The major part of these materials will be administered to all groups in one day. This administration will take about 1 hour and 15 minutes in senior high schools and about 1 hour and 30 minutes in junior high schools. Select any convenient day about 2 or 3 weeks before the end of the school year. After CardPac Administration Day, each student must give a course card to each of

his teachers; therefore, there must be a long enough interval between CardPac Day and the end of the school year so that each student will meet each of his classes during that interval. Also, the interval must be long enough so that students who are absent on CardPac Day will have time to complete the materials when they return.

(5) Prepare and Reproduce Local Questionnaire Items. The general questionnaire includes 71 items. A principal may add as many as 10 local items if he wishes. Specific instructions for adding local items are included in the back of this manual.

(6) Prepare and Reproduce a Local Supplement to the Proctor's Instructions. The principal may wish to add special local instructions of his own to the general CardPac Proctor's Instructions. Specific points that the principal may wish to cover in his instructions include:

a) Telephone number. Space is provided on the Student Address Card for the student to enter a telephone number up to 10 characters long. This telephone number is for later local use. It will be printed on student lists furnished to schools and on student information cards furnished for teachers in the fall. Students should record their telephone numbers in whatever way will be most usable to the faculty and staff. The principal may wish all students to include an exchange prefix or an area code, or simply to record the number itself.

b) The courses for which student course cards are to be filled out. The Proctor's Instructions include these instructions to the student for filling out the course cards: "On these cards, write your name and the names of the subjects you are taking, one subject per card. Make out a card for each of your classroom subjects, but not for extracurricular activities. Make out cards for physical education, driver training, etc., as well as for your regular five-days-per-week courses. Do not fill out cards for your extracurricular activities, such as baseball or band. Fill out cards for courses you may be taking in another school in this district, but do not fill out cards for any courses you are taking in another school district."

c) Handling absent students.

d) Returning the completed CardPac materials to the office.

(7.) Divide and Distribute Materials to Proctors. The materials should be distributed early enough so that the proctors will have time to familiarize themselves with the materials and instructions before CardPac Day. Remember, all shipping containers should be saved for later reuse in returning the materials to Iowa City. Each proctor should receive the following materials:

a) Assigned Student Stencil Cards, for the students for whom such cards have been furnished. The Principal's List of Student Numbers may be used as a checklist for dividing and distributing these cards. The cards are in alphabetic sequence by grades to facilitate distribution. If none of the students participated in the Iowa Tests of Basic Skills and Iowa Tests of Educational Development, there will be no assigned stencil card to distribute.

b) Unassigned Student Stencil Cards, for the students for whom assigned stencil cards have not been furnished.

c) Student CardPacs, one for each student. These are the same for all students and are not identified by student.

d) Extra Course Cards, one extra card for each junior high student. No extra cards for senior high students.

e) General Questionnaires, one for each student. These are the same for all students.

f) Local Questionnaires, if used, for each student.

g) Proctor's Instructions.

h) Local Supplement to CardPac Proctor's Instructions, if used.

(8.) Divide and Distribute CardPac Materials for Classroom Teachers. The teachers should have ample time to become familiar with the materials and instructions before needing to use them. Each classroom teacher should receive:

a) Teacher Header Cards. These cards have the teacher's name and number printed on them. The teacher will need one for each section of each subject he teaches. If there are not enough preprinted cards for a particular teacher, blank header cards should be used, and the teacher's Social Security number and name should be written in the spaces at the top of the card.

b) Course Header Cards. One of these should be furnished to the teacher for each section of each class he teaches. If there are not enough of these cards with the course name and course section number printed on them, blank cards should be filled out and used. Write the course and section number in the space provided. First refer to your List of Course Header Cards furnished with the CardPac materials. If the course is included in the list, use the course and section number that appears on the list. If there are not enough cards for all the sections of a course, add sequential section numbers to those listed. If, for example, three Course Header Cards were furnished for English, numbered 105-01, 105-02, and 105-03, and a header card for a fourth section is needed, assign it number 105-04. Otherwise, refer to the course list in the Appendix. Use the four-digit Iowa Educational Information Center course number listed and the local course number.

c) Classroom Teacher's Instructions.

d) Local Supplement to Classroom Teacher's Instructions. The principal may wish to add special instructions to the classroom teacher for:

(1) Taking care of students who are absent when course cards are collected from the rest of the class

(2) Marking grades on student course cards

(3) Returning cards to the office

(9.) Hold a Briefing Session for the Faculty. A few days before CardPac Administration Day, the principal will probably wish to hold a briefing session with his faculty in order to go over the administration procedures with them. The principal may also wish to distribute the CardPac materials to proctors and classroom teachers at this briefing session.

PROCEDURE ON CARDPAC ADMINISTRATION DAY

At the designated time on CardPac Administration Day, the students and proctors will report to the rooms to which they have been assigned. A detailed description of the administration of CardPac to the students is included in the Proctor's Instructions in the Appendix. Briefly, the following steps will be followed:

(1) The proctor will pass out Assigned Student Stencil Cards to the students for whom he has assigned cards.

(2) Unassigned Student Stencil Cards will be distributed to students who do not receive assigned cards.

(3) Students who receive unassigned cards will write their names on these cards.

(4) CardPac envelopes will be distributed to all students.

(5) There are eight course cards in the envelope. Students will fill in one course card for each subject they are taking. The proctor will distribute extra course cards where needed and will pick up surplus cards.

(6) Students will stencil their numbers on all student cards.

(7) The proctor will collect the stencil cards.

(8) Students will return the course cards to the envelope and save them for later use.

(9) Students will fill out basic data about themselves on card 2, the Student Information Card, and on card 3, the Student Address Card.

(10) The proctor will pass out the general questionnaires and the local questionnaires, if used.

(11) Students will mark their responses to the questionnaires on card 4, the Questionnaire Answer Card.

(12) The proctor will collect cards 2, 3, and 4.

(13) The proctor will collect the sample cards and questionnaires.

(14) Students will be instructed to carry their course cards to their classes and, the first time they meet each class, give the appropriate course card to the teacher.

(15) The proctor will return the following groups of materials to the office:

a) Student Stencil Cards for students present and participating in CardPac.

b) Assigned Student Stencil Cards for absent students.

c) Cards 2, 3, and 4 grouped together for each student.

d) Sample Address Cards.

e) General and local questionnaires.

f) All unused Unassigned Student Stencil Cards.

g) All unused Student Course Cards.

h) Extra CardPac envelopes.

CLASSROOM TEACHER'S HANDLING OF COURSE CARDS

Detailed instructions for the handling of the course cards by classroom teachers are included in the Appendix. Briefly, each teacher will perform these steps:

(1) The first time he meets each of his classes after CardPac Administration Day, the teacher will take the appropriate Course Header Card from his deck of header cards.

(2) The teacher will write on the board the course number from that Course Header Card.

(3) The students will copy the course number on their course cards for this class.

(4) The teacher will collect the course cards for this class from the students.

(5) The teacher will take a Teacher Header Card from his desk and place it in front of the Student Course Cards for this class.

(6) The teacher will write the room number on the Course Header Card and place it in front of the Teacher Header Card.

(7) The teacher will put a rubber band around these cards and save them, along with the cards for his other classes, until the end of the semester.

(8) At the end of the semester, the teacher will mark student grades on the course cards.

(9) The teacher will turn the packs of course cards in to the office.

STEPS TO BE TAKEN BY THE PRINCIPAL AFTER CARDPAC ADMINISTRATION DAY

1. Take care of Absentees.

   a) If a student is absent on CardPac Administration Day, the CardPac proctor will turn in the stencil cards for these students separately. The principal will save these stencil cards along with the other CardPac materials for these students. When the students return to school, the principal should have them fill in the CardPac materials by:

      (1) Stenciling ID number on all cards

      (2) Completing course cards

      (3) Filling in basic data cards 2 and 3

      (4) Responding to questionnaire on card 4

      These students should then give their course cards to their teachers as they go to classes.

      Two alternative plans are possible:

      (1) Have the proctors keep the stencil cards and envelopes of the absentees. Then, when the students return, the proctors will have them complete the CardPac materials.

      (2) A few days after CardPac Day, hold a makeup session for all students who were absent. This session can probably be supervised by one proctor.

   b) If a student is present on CardPac Administration Day, but absent afterwards, he should keep his course cards and distribute them to his teachers after he returns to school.

2. Check Returned Materials. The principal should check to make sure that the proctors turn in all completed cards and other materials promptly after administration on CardPac Day. At the end of the first semester he should make sure that the classroom teachers return a pack of course cards, preceded by the proper Teacher Header Card and Course Header Card, for each section of each course taught.

3. Dispose of Questionnaires and Instructions. The General questionnaires and instructions need not be returned to the Iowa Educational Center. They may be destroyed.

4. Package the Materials To Be Sent to Iowa City. The following CardPac materials should be packaged for return to Iowa City. The original shipping containers should be used. Please remove rubber bands, etc., from around the cards, and pack the cards so that all cards face the same direction and none are upside down. Insert a card divider between each of the different types of cards. The cards should be firmly packed in each container. If a container is not completely filled, stuff the vacant space with paper so that the cards are held tightly together. Please package the materials in the order listed:

   a) Card 2 (Student Information Card), Card 3 (Student Address Card), and Card 4 (Questionnaire Answer Card) for all students. These cards should be kept together by student.

   b) Course Cards. The deck of cards for each course section should be kept intact, with the Course Header Card first, the Teacher Header Card second, then the Student Course Cards for that section. Otherwise, no special sequence need be observed.

   c) Used Student Stencil Cards. In senior high schools these can be packaged together in any order. In junior high schools the stencil cards for the highest grade should be grouped according to the probable school to be attended by the student next year. For example, in a junior high with grades 7, 8, and 9 that is a feeder school for two senior highs, A and B, the used stencil cards should be divided into three groups:

      (1) Cards for 7th and 8th graders
      (2) Cards for students who will attend school A
      (3) Cards for students who will attend school B

      A junior high including grades 7, 8, and 9 that acts as a feeder school for just one high school will have two groups of stencil cards:

      (1) Cards for 7th and 8th graders

      (2) Cards for 9th graders

      A stencil Divider Card should be filled out and inserted in front of each group of stencil cards. (In order to facilitate sorting stencil cards into groups, the junior high principal may wish to have the CardPac Proctors turn in the cards to the office in the proper groups.)

d) Sample Student Address Cards.

e) All unused cards, including:

  (1) Unused Assigned Student Stencil Cards--for students who have withdrawn from the school before CardPac Day.

  (2) Unused Unassigned Student Stencil Cards.

  (3) Blank Teacher Header Cards.

  (4) Blank Course Header Cards.

  (5) Extra Student Course Cards.

  (6) Extra Student CardPacs.

f) School Header Cards -- identifying the school. One of these cards, properly completed, should be placed in the front of each box of cards.

g) A Copy of the Local Questionnaire. This will be needed in tabulating responses to the local questionnaire.

5. Bind or tape the container securely.

6. Mark the containers 1 of 3, 2 of 3, etc.

7. Send the materials to Iowa City. The materials should be returned by June 15. The method of sending the materials is left to the discretion of the principal. They may be sent by mail, bus, freight, or parcel delivery service. They are to be sent to:

CardPac Processing Service
321 East Market Street
Iowa City, Iowa 52240

If you have any questions about the administration of CardPac, write:

CardPac
Iowa Educational Information Center
The University of Iowa
Iowa City, Iowa 52240

or phone Iowa City, Area 319, 338-0511, Extension 5421 -- ask to speak to a CardPac Consultant.

CARDPAC ADMINISTRATION CHECKLIST

Below is a checklist of the steps in the administration of CardPac. The principal is encouraged to use this list and check off the steps as they are completed.

Prior To CardPac Administration Day

1. ____ Check CardPac materials for completeness.
    - ____ Assigned Student Stencil Cards
        - ____ and List of Assigned Student Stencil Cards
    - ____ Unassigned Student Stencil Cards
    - ____ Student CardPac Envelopes
    - ____ Extra Student Course Cards
    - ____ Assigned Teacher Header Cards
        - ____ and List of Assigned Teacher Header Cards
    - ____ Unassigned Teacher Header Cards
    - ____ Assigned Course Header Cards
        - ____ and List of Assigned Course Header Cards
    - ____ Unassigned Course Header Cards
    - ____ Questionnaires
    - ____ Proctor's Instructions
    - ____ Classroom Teacher's Instructions
    - ____ School Header Cards
    - ____ Stencil Divider Cards
    - ____ Card Dividers
    - ____ CardPac Brochures
    - ____ CardPac Newspapers
    - ____ Principal's Manual
2. ____ Establish CardPac Groups.
3. ____ Assign a proctor to each CardPac group.
4. ____ Choose a CardPac Administration Day.
5. ____ Prepare and reproduce local questionnaire items, if used.
6. ____ Prepare and reproduce a local supplement to the Proctor's Instructions and Classroom Teacher's Instructions, if used.
7. ____ Divide and distribute materials to proctors.
    - ____ Assigned Student Stencil Cards
    - ____ Unassigned Student Stencil Cards
    - ____ Student CardPac Envelopes
    - ____ General Questionnaires
    - ____ Local Questionnaires, if used
    - ____ Proctor's Instructions
    - ____ Local Supplement to Proctor's Instructions, if prepared.

8.____ Divide and distribute CardPac materials for classroom teachers.
  - ____ Teacher Header Cards
  - ____ Course Header Cards
  - ____ Classroom Teacher's Instructions
  - ____ Local Supplement to Classroom Teacher's Instructions, if prepared.

9.____ Hold a briefing session for the faculty.

After CardPac Administration Day

1.____ Take care of absentees.
2.____ Check returned materials.
3.____ Dispose of questionnaires and instructions.
4.____ Package the materials to be sent to Iowa City.
5.____ Bind or tape the containers securely.
6.____ Mark the containers 1 of 3, 2 of 3, etc.
7.____ Send the materials (by June 15) to:

CardPac Processing Service
321 East Market Street
Iowa City, Iowa 52240

INSTRUCTIONS TO PRINCIPALS REGARDING ADMINISTRATION OF LOCAL QUESTIONNAIRE ITEMS

INTRODUCTION

This Spring, each of your students will be asked to respond to a questionnaire as part of the CardPac system of educational accounting. The items in this questionnaire are of interest to educators in general. However, there may be other items of specific interest to your school but which have not been included in the general questionnaire. CardPac's flexibility allows a school system to devise and administer as many as 10 additional questions of local concern.

DIRECTIONS

On the back of the CardPac Questionnaire Answer Card are the answer spaces provided for local school use. Any number of these answer spaces numbered from 101 to 110 may be used, or none of them. Students will respond to a local questionnaire in the same way as they respond to the CardPac Questionnaire, administered first. In utilizing the provision for inclusion of your own school's items, the following steps should be taken:

(1) Construct up to 10 multiple-choice items. The number of choices per item may vary, but may not exceed 25.

Number each choice with both a letter and a number regardless of the number of choices for any individual item. For example:

A1 - choice 1
A2 - choice 2
A3 - choice 3

(2) Start numbering the local items with 101. Do not go beyond 110.

(3) Construct directions for students and teachers for the administration of these items.

(4) Have these items and directions reproduced legibly and in the same format as is used in the general CardPac questionnaire.

(5) Distribute the local questionnaires to the proctors with the other CardPac materials.

LOCAL QUESTIONNAIRE EXAMPLE

Directions: Mark your response to each item in this questionnaire in the same way as you did your responses to the other questionnaire. The first item in this questionnaire is numbered 101. Be sure to mark your response for this item in space 101 on the Questionnaire Answer Card.

All students answer these items:

101. Which of the following statements is most true about the job held by your father (or by the male head of your household)?

A1 He owns his own business.
A2 He is a partner in a business.
A3 He works for a small business (less than 20 employees).
A4 He works for a large concern.
A5 None of the above applies.

102. If you drive a car to school, where do you usually park?

A1 On Beech Avenue.
A2 In the southwest parking lot.
A3 In the northeast corner lot.
A4 On Lynn Avenue.
A5 Some other place than the above.
B1 I do not drive a car to school.

Students in Grades 10 and 11 stop here! Students in Grade 12 continue to end of Questionnaire.

103. How many times have you been an officer of a school club, class, or some other school organization?

A1	None	A4	Three times
A2	Once	A5	Four or more times
A3	Twice		

PRECAUTIONS

Since the Iowa Educational Information Center will be tabulating the responses made by students for each school system, student responses to local questionnaire items must be recorded in the space provided on the CardPac Questionnaire Answer Card.

In constructing items, the following precautions should be observed:

1. The item should not cause controversy, hostility, or embarrassment to those answering it.

2. The item should not violate the student's privacy concerning matters most persons would hold to be too personal to discuss openly.

3. The item should not constitute a potential violation of someone's welfare or rights. An extreme example might be an item which asks the student to report whether or not he dislikes a particular teacher. This item would be potentially damaging to both the student and the teacher.

4. Items asking for a student judgment about something should be phrased to provide responses reflecting positive as well as negative views. For example, an item poor in this respect would be: "I dislike school because," etc. This item does not provide for the possibility that the student may like school.

5. Item construction, in terms of complexity, grammatical correctness, etc., should reflect careful consideration.

6. Occasionally, though rarely, a student may wish not to answer an item. Such omissions should be allowed without the student's suffering harm or embarrassment. It is not recommended, however, that this permissibility be specifically announced to students, although teachers should be made aware of it.

7. Students are allowed to check only one of the possible responses to a question. An example of an incorrect item is: "In the following list of adjectives, the ones that describe you . . ."

8. In some types of items it is necessary to include a response such as "None of the above applies," or "I don't know," in order to present a possible correct response for every student.

RESULTS

Responses made by students to questionnaire items constructed by the local school will be tabulated by IEIC and reported back to the school. Tables will show, item by item, what percent of the students in each grade marked each response. The responses of individual students to local items will also be reported by item and response numbers.

PRINCIPAL'S LIST OF COURSE NUMBERS

IEIC Number	Subject Title	IEIC Number	Subject Title
	BUSINESS EDUCATION		
0140	Bookkeeping I	0642	Secretarial Practice
0141	Bookkeeping II	0643	Speedwriting
0142	Accounting I	0644	Stenograph Machine
0143	Accounting II	0700	Typing
0240	Business Law	0740	Typing I
0340	Comptometer Operation	0741	Typing II
0341	Calculator Operation	0742	Personal Typing
0342	Adding Machine Operation	0900	Other Business Education
0343	Bookkeeping Mach. Oper.		
0344	Duplicating Mach. Oper.		COMMUNICATIONS
0345	Dictaphone Mach. Oper.		
0440	Keypunch & Verifyer Oper.	1100	Composition
0441	Tabulating Mach. Oper.	1140	Creative Writing
0442	Computer Operator	1141	Advanced Grammar
0443	Computer Programming	1142	Advanced Composition
0444	Systems Analyst	1150	Journalism I
0445	Installation Supervisor	1151	Journalism II
0446	Installation Management	1200	Dramatics
0540	Office Practice	1240	Dramatics I
0541	General Business	1241	Dramatics II
0542	Business Arithmetic	1242	Dramatics III
0543	Salesmanship	1243	Dramatics IV
0640	Shorthand I	1300	English
0641	Shorthand II	1340	English 9

IEIC Number	Subject Title
1341	English 10
1342	English 11
1343	English 12
1344	Business English
1390	Remedial English
1400	Penmanship
1540	Radio Production
1541	Radio Direction
1550	TV Production
1551	TV Direction
1600	Reading
1640	American Literature
1641	English Literature
1642	World Literature
1650	Library Arts
1690	Remedial Reading
1740	Speech I
1741	Speech II
1742	Speech III
1743	Speech IV
1744	Debate
1745	Forensics
1800	Spelling
1840	Word Study
1850	Language Arts Core
1860	Language Arts and Social Studies Core
1900	Other Communications

FINE ARTS

2100	Art
2140	Art I
2141	Art II
2142	Art III
2143	Art IV
2144	Art Crafts
2200	Music
2228	Junior Band
2240	Mixed Chorus
2241	Glee Club
2242	Senior Band
2243	Orchestra
2244	Music Appreciation
2245	Music Theory
2246	Private Lessons
2900	Other Fine Arts

FOREIGN LANGUAGES

3100	French
3140	French I
3141	French II
3142	French III
3143	French IV
3200	German
3240	German I
3241	German II
3242	German III
3243	German IV
3300	Latin
3340	Latin I
3341	Latin II
3342	Latin III
3343	Latin IV
3400	Russian
3440	Russian I
3441	Russian II
3442	Russian III
3443	Russian IV
3500	Spanish
3540	Spanish I
3541	Spanish II
3542	Spanish III
3543	Spanish IV
3900	Other Foreign Language

MATHEMATICS

4100	Algebra
4140	Algebra I
4141	Algebra II
4142	Algebra III (College Alg.)
4143	Matrix Algebra
4240	Calculus I
4241	Calculus II
4340	Computer Math
4400	General Math

IEIC Number	Subject Title
4440	General Math I
4441	General Math II
4442	General Math III
4443	General Math IV
4444	Consumer Math
4445	Vocational Math
4446	Calculator Math
4490	Remedial Math
4540	Plane Geometry
4541	Solid Geometry
4542	Fused Geometry
4543	Analytic Geometry
4640	Probability & Statistics
4740	Senior Topical Adv. Math
4840	Trigonometry
4900	Other Mathematics

HEALTH & PHYS. EDUC.

5100	Health
5140	Physiology
5200	Boys' Physical Educ.
5300	Girls' Physical Educ.
5400	Boys' & Girls' Phys. Educ.
5900	Other Health & Phys. Educ.

SCIENCE

6100	Biology
6140	Biology I
6141	Biology II
6150	Botany I
6151	Botany II
6160	Zoology I
6161	Zoology II
6240	Chemistry I
6241	Chemistry II
6300	General Science
6340	General Science I
6341	General Science II
6440	Physics I
6441	Physics II
6442	PSSC Physics
6540	Physical Science

IEIC Number	Subject Title
6541	Astronomy
6542	Geology
6543	Earth Science
6900	Other Science

SOCIAL STUDIES

7140	Economics
7200	Geography
7300	History
7335	Iowa History
7340	American History
7341	Western Civilization
7342	World History
7343	Ancient History
7440	Philosophy
7532	Citizenship
7540	American Government
7541	Civics
7542	American Gov't & Soc. Pr.
7640	Psychology I
7641	Psychology II
7700	Social Science
7741	Social Problems
7840	Sociology
7841	Anthropology
7940	Safety Education
7941	Driver Education
7950	Other Social Studies

VOCATIONAL EDUCATION

8100	General Agriculture
8140	General Agriculture I
8141	General Agriculture II
8142	General Agriculture III
8143	General Agriculture IV
8240	Vocational Agriculture I
8241	Vocational Agriculture II
8242	Vocational Agriculture III
8243	Vocational Agriculture IV
8300	Homemaking
8340	General Homemaking I
8341	General Homemaking II

IEIC NUMBER	Subject Title
8342	General Homemaking III
8343	General Homemaking IV
8440	Vocational Homemaking I
8441	Vocational Homemaking II
8442	Vocational Homemaking III
8443	Vocational Homemaking IV
8500	Industrial Arts
8532	Woodworking
8540	Woodworking I
8541	Woodworking II
8542	Woodworking III
8543	Woodworking IV
8535	Metalworking
8545	Metalworking I
8546	Metalworking II
8547	Metalworking III
8548	Metalworking IV
8538	Drafting
8550	Drafting I
8551	Drafting II
8552	Drafting III
8553	Drafting IV
8632	Graphic Arts
8640	Graphic Arts I
8641	Graphic Arts II
8642	Graphic Arts III
8643	Graphic Arts IV
8635	Electricity
8650	Elect-Electronics I
8651	Elect-Electronics II
8652	Elect-Electronics III
8653	Elect-Electronics

IEIC NUMBER	Subject Title
8638	Plastics
8654	Plastics I
8655	Plastics II
8656	Power Machines I
8657	Power Machines II
8658	Power Machines III
8659	Power Machines IV
8600	Crafts I
8661	Crafts II
8690	Other Industrial Arts

TRADE & INDUSTRIAL

8840	Aircraft Mechanic
8841	Auto Body Repair
8842	Auto Mechanics
8843	Aviation Mechanic, Engine
8844	Cabinetmaking
8845	Carpentry
8846	Co-op Program
8847	Data Processing Equip Rep.
8848	Diesel Mechanic
8849	Drafting
8850	Machine Shop
8851	Painting & Decorating
8852	Photography, Comm. Art
8853	Printing
8854	Printing, Offset
8855	Sheet Metal
8856	Tailoring
8857	Welding
8940	Other Trade & Indus. Arts

CLASSROOM TEACHER'S INSTRUCTIONS

On CardPac Administration Day each student will prepare a Student Course Card for each course he is taking. The student will stencil his number on each card and will write his name and the title of each of the courses he is taking on these cards, one card per course. The student will be instructed to carry these cards with him to his classes after CardPac Administration Day.

You will collect, from your students, the appropriate course cards for each section of the courses you teach, add a Course Header Card and a

Teacher Header Card, and keep the cards until the end of the semester, when you will mark student's grades on them. The following steps are outlined to help you with this procedure.

(1) Prior to CardPac Administration Day, you will receive:

   a) A Course Header Card for each section of each course you are teaching. The course name and course and section number are printed across the top of the cards. The first three numerals are the course number; the last two are the section number. For example, 101-01 indicates Course 101, Section 01.

   b) A Teacher Header Card for each section of each course you are teaching. These cards are all alike, with your name and Social Security number printed across the top. Check all of your Teacher Header Cards to be certain that each card contains your name and your Social Security number. If you need extra Teacher Header Cards, or if some of the cards you received are blank, please print your name and Social Security number in the spaces provided at the top of the card. Check your supply of both header cards. If it is inadequate or incorrect notify your principal promptly.

(2) After CardPac Administration Day, at the earliest meeting of each of your classes, select from your Course Header Cards the appropriate card for that course section.

(3) Have the students take from their envelopes of course cards, the proper card for the class. If any student does not have the proper course card, tell him to get one from the office and bring it the next time the class meets.

(4) Write the course and section number on the board.

(5) Have the students copy this number in the proper place on the card for that class.

(6) Collect these cards from the students. Keep them all face up, with corner cut in uniform position.

(7) Take one of your Teacher Header Cards and place it on top of the Student Course Cards.

(8) Place the Course Header Card for this course section on top of the Teacher Header Card.

(9) Write the room number on this Course Header Card, identifying the room in which you normally teach this class.

(10) Put a rubber band around the cards and store them in a safe place until the end of the semester.

(11) If any students are absent on the day you collect the cards, be sure to obtain their course cards when they return. Write the course-section number on the cards and insert them with the other cards for each class.

(12) At the end of the term, record each pupil's semester grade by blackening the appropriate circle. Keep intact the deck of cards for each section.

(13) Turn in all cards to the principal. You will have a pack of cards for each of your course sections. Each pack will have:

a) The Course Header Card on top.

b) The Teacher Header Card next.

c) A course card for each student enrolled in that section.

PROCTOR'S INSTRUCTIONS

Nature Of The CardPac System

The Iowa State Department of Public Instruction is now preparing to adopt a new computerized system whereby the public schools can collect, with minimum effort, much of the information they need for the State Department reports and for their own purposes. This new system is called "CardPac." As the name implies, card forms will be used for collection of most of the information. The packs of cards will then be sent to Iowa City for processing. By automated procedures, the information recorded on the cards will be variously organized and reported back to the schools in conveniently usable form.

CardPac offers several advantages for the schools in the compilation of educational data. It will reduce or eliminate much of the repetitious clerical work heretofore involved. In the past you have had to enter repeatedly, on many different local, State, and Federal reports, certain types of identifying information common to them all — such as names of school buildings, course names or numbers, teacher names, etc. With CardPac, this kind of information can be preprinted on prepunched "header" cards supplied to you. CardPac also facilitates the recording of requested detail information. In most cases, you will need to make just a single pencil mark per item to complete the forms, without having to consult any separate code lists. You will find the card type of record easy to handle and to assemble with the preprinted header cards. Also, its adaptability to automated processing will expedite the return of accurate final reports to the schools.

Types Of Cards In The CardPac System

Before administering the CardPac system, you should familiarize yourself with the various card forms employed. These are as follows:

1. Student Stencil Card, blue, numbered 1: Computerized data processing demands the adoption of a numerical system for identifying pupils, teachers, schools, and districts. If the automation is to function properly, these identification numbers must be recorded accurately and completely. A mistake in, or omission of, even a single digit in just one of these numbers can cause very serious difficulty in electronic processing. Accuracy in other items of information collected is also important, of course. However, mistakes in these other items can usually be corrected more conveniently than can mistakes in the ID numbers.

   Pupils tend to forget long ID numbers and to make mistakes in recording them. To overcome these difficulties, the Student ID Stencil Card has been devised, with which the pupil may stencil his number on other data collection forms. The use of this device ensures that he will record his ID number correctly even though he may not even know what it is.

   If any of your students have taken the Iowa Tests of Basic Skills or the Iowa Tests of Educational Development this year, you will receive for each of those students a Stencil Card with his or her name and ID number already printed on it. The rest of the cards supplied to you will have ID numbers printed on them but no names. In schools that have not given the Iowa tests no cards will have names printed on them.

2. Student Information Card, numbered 2: This card is for basic personal information about the pupil, such as his name, date of birth, sex, and name of his parent or guardian.

3. Student Address Card, numbered 3: This is a basic location card for recording the pupil's house number, street address, city (or post office), telephone number, and grade level.

4. Sample Student Address Card, pink, not numbered: This sample card shows how the Student Address Card should be filled out. On the back of the Sample Card are listed some of the more common abbreviations and examples of correctly shortened addresses.

5. Student Questionnaire Answer Card, numbered 4: This is the card on which the pupils will mark their answers to the questionnaire.

6. Student Course Card, numbered 5: Each student will have eight of these cards. On these cards will be recorded the student's grade for the semester.

   Each student will also receive a copy of the questionnaire. You should look through this questionnaire in advance, so that you will be prepared to answer any questions raised by the students.

   For your convenience, all except the stencil card for each student have been enclosed in an envelope.

PRELIMINARY INSTRUCTIONS

You have been asked by your superintendent or principal to serve as a CardPac proctor, with the duty of administering the CardPac Student Information System to a designated group of pupils in your school. Please follow these instructions rigorously. Depart from them only when instructed to do so by your principal. Please read the oral instructions to the pupils exactly as they are presented here unless changes have been made by your principal. Subsequent repetitions or explanations of these instructions are permitted, but none of the instructions should be omitted or changed in the initial presentation, except as directed by your principal.

Pupils should be told in advance to bring two soft lead pencils each. You should also have an extra supply of soft (No. 2 or 2-1/2) lead pencils to lend to the pupils when necessary.

Before the administration period, make sure you have enough stencil cards, envelopes, and questionnaire booklets for all students in your group.

ADMINISTERING THE CARDPAC SYSTEM

(1) When all pupils are assembled and ready to work, say:

"MAY I HAVE YOUR ATTENTION, PLEASE. TODAY, WE ARE GOING TO FILL OUT SEVERAL CARDS WHICH ASK FOR CERTAIN

INFORMATION ABOUT YOU AND YOUR FAMILY. THE PROCEDURE WE WILL USE FOR COLLECTING THIS INFORMATION IS CALLED THE IOWA CARDPAC SYSTEM OF EDUCATIONAL ACCOUNTING. THIS IS PART OF A NEW SYSTEM FOR COLLECTING EDUCATIONAL DATA FROM IOWA PUBLIC SCHOOLS THAT HAS BEEN DEVELOPED FOR THE STATE DEPARTMENT OF PUBLIC INSTRUCTION IN DES MOINES. SOME OF THIS INFORMATION IS NEEDED BY THE TEACHERS AND PRINCIPALS OF THIS SCHOOL. SOME IS NEEDED BY THE DEPARTMENT OF PUBLIC INSTRUCTION FOR STATE AND FEDERAL GOVERNMENT REPORTS. IT IS ESSENTIAL THAT YOU FOLLOW DIRECTIONS CAREFULLY SO THAT THE INFORMATION YOU GIVE WILL BE AS ACCURATE AS POSSIBLE. PLEASE DO NOT WORK AHEAD. IF YOU FINISH ONE PART BEFORE THE REST OF THE CLASS, WAIT QUIETLY UNTIL I READ THE INSTRUCTIONS FOR THE NEXT PART.

"I AM NOW GOING TO DISTRIBUTE TO EACH OF YOU A BLUE STENCIL CARD AND AN ENVELOPE CONTAINING 12 OTHER CARDS. PLEASE DO NOT REMOVE THE CARDS FROM THE ENVELOPE OR WRITE ANYTHING ON THEM UNTIL I TELL YOU TO DO SO. DO NOT FOLD OR BEND THE CARDS."

2. Distribute to each student one stencil card and one CardPac envelope. Be sure that each stencil card that has a name printed on it goes to the student named. All other students will receive cards on which only an ID number is printed.

   Assigned Student Stencil Cards for students who are absent should be placed in a separate group, identified by a slip marked "absent," and kept separate.

3. When these materials have been distributed, say:

   "SOME OF YOU MAY HAVE RECEIVED A BLUE STENCIL CARD ON WHICH YOUR OWN NAME AND GRADE ARE PRINTED. OTHERS MAY HAVE RECEIVED STENCIL CARDS ON WHICH THE NAME AND GRADE SPACES AT THE TOP EDGE OF THE CARD ARE BLANK. IF YOUR STENCIL CARD HAS A NAME PRINTED ON IT WHICH IS NOT YOUR OWN, RAISE YOUR HAND AND I WILL GIVE YOU A BLANK CARD INSTEAD. (Pause to exchange such cards.) IF THE NAME SPACE IS BLANK ON YOUR CARD, PRINT YOUR OWN NAME IN THE BLANK. PRINT YOUR LAST NAME FIRST, THEN YOUR FIRST NAME AND INITIAL. THEN WRITE YOUR GRADE IN THE PROPER BOX AT THE TOP OF THE CARD."

4. When all students have their names and grades on the stencil cards, say:

"NOW LAY YOUR STENCIL CARD ASIDE AND TAKE YOUR STUDENT COURSE CARDS, NUMBERED 5, FROM THE ENVELOPE. YOU SHOULD EACH HAVE EIGHT OF THESE CARDS. (Pause) ON THESE CARDS, WRITE YOUR NAME AND THE NAMES OF THE SUBJECT YOU ARE TAKING, ONE SUBJECT PER CARD. DO NOT WRITE IN THE COURSE NUMBER SPACE. MAKE OUT A CARD FOR EACH OF YOUR CLASSROOM SUBJECTS, BUT NOT FOR EXTRACURRICULAR ACTIVITIES. MAKE OUT CARDS FOR PHYSICAL EDUCATION, DRIVER EDUCATION, DRIVER TRAINING, ETC., AS WELL AS FOR YOUR REGULAR FIVE-DAYS-PER-WEEK COURSES. DO NOT FILL OUT CARDS FOR YOUR EXTRACURRICULAR ACTIVITIES, SUCH AS BASEBALL OR BAND. FILL OUT CARDS FOR COURSES YOU MAY BE TAKING IN ANOTHER SCHOOL IN THIS DISTRICT, BUT DO NOT FILL OUT CARDS FOR ANY COURSES YOU ARE TAKING IN ANOTHER DISTRICT. ARE THERE ANY QUESTIONS? (Pause) IF YOU NEED MORE COURSE CARDS, HOLD UP YOUR HAND AND I WILL GIVE YOU EXTRA ONES. IF YOU HAVE MORE THAN YOU NEED, HOLD THEM UP, SO THAT I CAN COLLECT THEM." (Exchange cards as needed, collecting all extras. Pause until everyone has finished writing his name and the course names.)

5. Then say:

"AS PART OF THE PLAN FOR DATA COLLECTION, YOU HAVE EACH BEEN ASSIGNED A SPECIAL NUMBER. WE WILL CALL THIS YOUR ID NUMBER, SHORT FOR IDENTIFICATION NUMBER. YOUR OWN ID NUMBER WILL BE THE ONE THAT IS PRINTED ON YOUR BLUE STENCIL CARD, NEAR THE LEFT-HAND CORNER. NOW AND THEN YOU WILL BE ASKED TO PUT THIS NUMBER ON YOUR TEST ANSWER SHEETS OR ON OTHER SPECIAL REPORT FORMS. FOR THIS YOU WILL USE YOUR BLUE STENCIL CARD. BY JUST MAKING MARKS THROUGH THE HOLES IN THIS CARD, YOU CAN RECORD YOUR NUMBER CORRECTLY ON ANOTHER CARD OR ANSWER SHEET WITHOUT HAVING TO REMEMBER THE NUMBER.

"WE ARE NOW READY TO MAKE YOUR FIRST USE OF THIS BLUE CARD. READ THE DIRECTIONS ON THE FRONT OF THE CARD SILENTLY TO YOURSELF WHILE I READ THEM ALOUD.

> "DIRECTIONS: USE THIS CARD TO MARK YOUR ID NUMBER ON REPORT FORMS SO THAT THEY MAY BE 'READ' ELECTRONICALLY. LAY THIS BLUE CARD OVER THE REPORT FORM, SO THAT THE EDGES OF THE TWO CARDS FIT EXACTLY, AND

SO THAT THE HOLES IN THE ID AREA OF THE BLUE CARD FIT EXACTLY OVER THE RECTANGLES PROVIDED IN THE REPORT FORM. HOLDING BOTH CARDS FIRMLY, MAKE A PENCIL MARK ON THE LOWER CARD THROUGH EACH OF THE HOLES IN THE DARK 'ID AREA.' THEN LIFT THE STENCIL CARD AND CHECK EACH MARK CAREFULLY. ENLARGE IT IF NECESSARY TO MAKE SURE IT COMPLETELY FILLS THE LITTLE BOX PROVIDED FOR IT.

"FOLLOW THESE DIRECTIONS FOR STENCILING YOUR ID NUMBER ON ALL OF YOUR COURSE CARDS, NUMBERED 5. BE SURE EACH TIME THAT THE TWO CARDS FIT EXACTLY. DO NOT LET THE TWO CARDS SLIP WHILE YOU ARE MARKING THROUGH THE HOLES. IF YOU HAVE ANY DIFFICULTY IN DOING THIS STEP, RAISE YOUR HAND AND I WILL HELP YOU. WHEN YOU HAVE FINISHED STENCILING YOUR ID NUMBER ON ALL THE CARDS, CHECK YOUR WORK CAREFULLY. IT IS VERY IMPORTANT THAT YOU PERFORM THIS TASK CORRECTLY. THERE SHOULD BE EXACTLY SIX FILLED RECTANGLES ON EACH OF THE CARDS. COUNT THEM TO MAKE SURE. (Pause)

6. "LAY THE COURSE CARDS ASIDE. NOW TAKE THE REST OF THE CARDS FROM YOUR ENVELOPE. YOU SHOULD HAVE ONE EACH OF THE CARDS NUMBERED 2, 3, AND 4 AND A PINK SAMPLE CARD. (Pause) STENCIL YOUR ID NUMBER ON CARDS 2, 3, AND 4. DO NOT MARK ON THE PINK SAMPLE CARD." (Allow time for the stenciling.)

7. "PUT YOUR COURSE CARDS BACK IN THE ENVELOPE. YOU ARE TO CARRY THESE CARDS WITH YOU THIS WEEK AND GIVE ONE TO EACH OF YOUR TEACHERS WHEN ASKED FOR IT. KEEP THE CARDS IN THE ENVELOPE AND THE ENVELOPE IN YOUR NOTEBOOK, NOT IN YOUR POCKET. DO NOT BEND OR LOSE THE CARDS. CARRY THEM WITH YOU UNTIL YOUR TEACHERS HAVE COLLECTED ALL OF THEM. (Pause)

8. "I WILL NOW COLLECT YOUR BLUE STENCIL CARDS."

Collect the stencil cards from the students. Keep these used stencil cards separate from unused stencil cards.

9. Then say:

"NOW LOOK AT YOUR PINK SAMPLE ADDRESS CARD. (Pause) THIS SHOWS HOW YOU ARE TO MARK THE LETTERS AND NUMBERS ON CARDS 2 AND 3. NOTICE THAT EACH BLACK

MARK IS JUST LARGE ENOUGH TO COVER COMPLETELY THE LETTER OR NUMERAL UNDERNEATH IT. (Pause) NOW LOOK AT YOUR STUDENT INFORMATION CARD, NUMBERED 2. IN THE BOXES AT THE TOP OF THE CARD, PRINT THE NAME OF YOUR PARENT OR GUARDIAN. USE ONLY ONE BOX FOR EACH LETTER OF THE NAME. START WITH THE LAST NAME FIRST, THEN THE FIRST NAME AND THE MIDDLE INITIAL. LEAVE A BLANK BOX AFTER THE LAST NAME, AND ANOTHER AFTER THE FIRST NAME. IF YOUR PARENT OR GUARDIAN HAS A LONG NAME, PRINT THE LAST NAME, LEAVE A SPACE, AND PRINT AS MUCH OF THE FIRST NAME AS YOU CAN. (Pause)

"NOW LOOK AT THE COLUMN OF LETTERS FROM A TO Z BELOW THE FIRST BOX. FIND THE LETTER IN THIS COLUMN THAT IS THE SAME AS THE LETTER IN THE FIRST BOX AND COVER IT WITH A HEAVY MARK, AS ON THE SAMPLE ADDRESS CARD. DO NOT MAKE THE MARK TOO BIG. IT SHOULD JUST COVER THE LETTER, BUT SHOULD BE BLACK ENOUGH TO HIDE IT. IF YOU MAKE A MISTAKE, ERASE IT CAREFULLY. NOW DO THE SAME FOR EACH OF THE REMAINING LETTERS IN THE NAME. WHEN YOU COME TO AN EMPTY BOX, MARK THE LITTLE DIAMOND PRINTED AT THE TOP OF THE ALPHABET. IF YOU DID NOT NEED TO USE SOME OF THE BOXES AT THE END OF THE NAME, BE SURE TO MARK THE DIAMOND FOR EACH OF THOSE BOXES ALSO. YOU SHOULD MAKE TWENTY MARKS, ONE FOR EACH COLUMN. ALL RIGHT, GO AHEAD. IF YOU HAVE ANY QUESTIONS, RAISE YOUR HAND, AND I WILL COME TO HELP YOU." Caution those who finish early not to work ahead of the group.

Give the students sufficient time to complete this task. When all have finished, say:

"IN THE NEXT SPACE ON THIS CARD, FILL IN THE OVAL FOR THE CORRECT TITLE OF YOUR PARENT OR GUARDIAN. BE SURE YOUR MARK COMPLETELY FILLS THE OVAL. (Pause) NEXT, FILL IN THE OVAL THAT INDICATES THE RELATIONSHIP TO YOU OF THE PERSON WHOSE NAME YOU HAVE PRINTED ON THE CARD. (Pause) NOW TURN THIS CARD OVER. IN THE BOXES AT THE TOP, PRINT YOUR OWN LAST NAME, FIRST NAME, AND MIDDLE INITIAL, LEAVING A BLANK SPACE BETWEEN YOUR LAST AND FIRST NAMES AND BETWEEN YOUR FIRST NAME AND MIDDLE INITIAL. IF YOU HAVE AN UNUSUALLY LONG NAME, PRINT YOUR LAST NAME, AND AS MUCH OF YOUR FIRST NAME AS YOU CAN, LEAVING A BLANK SPACE BETWEEN YOUR LAST AND FIRST NAMES. NEXT, BLACKEN THE APPROPRIATE LETTER, OR THE DIAMOND, UNDER EACH BOX. BE SURE YOU MAKE A MARK IN EVERY COLUMN." (Allow time for completion of this step.)

"NOW, IN THE REMAINING SECTIONS OF THIS CARD, FILL IN THE CORRECT OVALS FOR THE MONTH, DAY, AND YEAR OF YOUR BIRTH, AND YOUR SEX. THEN CHECK YOUR WHOLE CARD FOR ACCURACY. IF YOU MAKE ANY CHANGES, BE SURE TO ERASE COMPLETELY. WHEN YOU HAVE FINISHED, LAY CARD NO. 2 FACE DOWN ON THE TOP OF YOUR DESK."

When all have finished the preceding step, say:

"NEXT LOOK AT YOUR STUDENT ADDRESS CARD NUMBERED 3 AND THE PINK SAMPLE STUDENT ADDRESS CARD. ON THE SAMPLE CARD, A HOUSE NUMBER AND STREET ADDRESS FOR AN IMAGINARY STUDENT HAVE BEEN PRINTED IN THE BOXES. BELOW EACH BOX THERE IS A SET OF NUMERALS 0 THROUGH 9 AND ALSO A COMPLETE ALPHABET A TO Z. NOTICE THAT WHENEVER THERE IS A NUMERAL IN THE BOX, THE SAME NUMERAL BELOW IT HAS BEEN BLACKENED OUT. WHENEVER THERE IS A LETTER IN THE BOX, THE SAME LETTER BELOW IT HAS BEEN MARKED. THE DIAMOND HAS BEEN MARKED BELOW EACH EMPTY BOX, AS BEFORE. THERE ARE JUST 17 BOXES. IF YOU HAVE A LONG STREET NAME, YOU MAY ABBREVIATE SOME WORDS. LOOK AT THE EXAMPLES ON THE BACK OF THE SAMPLE CARD. (Pause) IF YOU HAVE ANY TROUBLE ABBREVIATING YOUR ADDRESS, RAISE YOUR HAND, AND I WILL HELP YOU AFTER THE OTHERS HAVE BEGUN WORK.

"NOW COMPLETE THE FRONT OF YOUR STUDENT ADDRESS CARD IN THE SAME WAY. DON'T INCLUDE CITY AND STATE. BE SURE TO LEAVE A BLANK SPACE BETWEEN EACH PART OF YOUR ADDRESS. IF YOUR HOUSE NUMBER OR STREET NUMBER INCLUDES A 1/2, MARK THE 1/2 IN THE APPROPRIATE COLUMN ON THE CARD. IF YOU DON'T NEED ALL THE BOXES, BE SURE TO MARK THE DIAMOND BELOW THE ONES YOU LEAVE EMPTY. ARE THERE ANY QUESTIONS? (Pause) GO AHEAD."

In helping students with abbreviations, retain the most distinctive portions of the word. Dropping vowels after the third letter is sometimes sufficient. Sometimes the first three letters and the final letter of a word will identify it adequately. For instance, depending on available space, any of the following would be satisfactory abbreviation for "Washington": Wshngtn, Washton, or just Wash. Words like "street" and "avenue" may be omitted if no ambiguity will result. When the students have completed this side of the Address Card, say:

"PLEASE CHECK YOUR ADDRESS MARKS, AND COUNT THEM TO MAKE SURE YOU HAVE EXACTLY 17 MARKS." (Pause)

"NOW TURN TO THE BACK OF THE STUDENT ADDRESS CARD. IN THE FIRST SECTION GIVE THE NAME OF THE CITY IN WHICH YOU LIVE OR THE POST OFFICE FROM WHICH YOU RECEIVE YOUR MAIL. IF THERE ARE TWO WORDS IN THE NAME, LEAVE A BLANK BETWEEN THEM. IF IT IS A LONG NAME, FILL IN AS MUCH OF IT AS YOU CAN. THEN MARK THE COLUMNS AS BEFORE." (Pause)

Note: If your principal has given you special instructions to read for filling in telephone numbers, use them. Otherwise, use the instructions below.

"NOW PRINT YOUR TELEPHONE NUMBER IN THE NEXT 10 BOXES. PUT ONLY ONE NUMERAL OR LETTER IN EACH BOX. THE LAST NUMERAL MUST BE IN THE LAST (10th) BOX. THIS MEANS THAT IF YOUR PHONE NUMBER CONTAINS SEVEN NUMERALS, YOU WILL PRINT THEM IN THE LAST SEVEN BOXES, LEAVING THE FIRST THREE BOXES EMPTY. DO YOU ALL UNDERSTAND THIS ? (Pause. Repeat directions and demonstrate, if necessary.) IF YOUR PHONE NUMBER INCLUDES A NAME (FOR EXAMPLE, CAPITOL 8-3591), PRINT ONLY THE FIRST TWO OR THREE LETTERS OF THE WORD. THERE IS NO WAY TO SHOW DASHES OR HYPHENS; JUST OMIT THEM. AREA CODES ARE NOT REQUIRED. GO AHEAD AND COMPLETE THIS STEP. (Pause)

10. "NEXT FILL IN THE OVAL CORRESPONDING TO THE GRADE YOU ARE IN NOW. WRITE YOUR NAME IN THE SPACE PROVIDED. THEN CHECK THE ENTIRE CARD, AND LAY THE COMPLETED CARD FACE DOWN ON TOP OF CARD NO. 2 ON THE TOP OF YOUR DESK."

11. Then continue:

"LOOK AT YOUR STUDENT QUESTIONNAIRE ANSWER CARD, NUMBERED 4. IN THE SPACE PROVIDED, PRINT YOUR LAST AND FIRST NAMES. (Pause) I AM NOW GOING TO DISTRIBUTE THE QUESTIONNAIRES. (Pass out questionnaires.) READ THE INSTRUCTIONS IN THE FRONT OF THE QUESTIONNAIRE SILENTLY TO YOURSELF AS I READ THEM ALOUD." (Read aloud the directions from the cover of the student questionnaire.)

"ARE THERE ANY QUESTIONS? YOU WILL HAVE APPROXIMATELY 30 MINUTES TO WORK YOUR ANSWERS. YOU MAY BEGIN."

12. Allow sufficient time for everyone to finish the questionnaire.

13. If a local questionnaire is not used, go to step 14. If a local questionnaire is used, collect the general questionnaires. Then pass out the local questionnaires and say:

"YOU WILL NOW FILL OUT ANOTHER QUESTIONNAIRE. READ THE INSTRUCTIONS, THEN MARK YOUR ANSWERS IN THE SAME WAY THAT YOU WORKED THE ANSWERS TO THE FIRST QUESTIONNAIRE. NOTE THAT THE FIRST ITEM ON THIS QUESTIONNAIRE IS NUMBERED 101. BE SURE TO RECORD YOUR ANSWER TO THAT ITEM IN THE SPACE MARKED 101 ON YOUR ANSWER CARD."

14. Say:

"HAS EVERYONE FINISHED THE QUESTIONNAIRE? (Pause) ALL RIGHT, LAY CARD 4 FACE DOWN ON TOP OF CARDS 2 AND 3. I WILL PICK UP THOSE FIRST, AND AFTERWARD WILL COLLECT THE PINK CARDS AND THE QUESTIONNAIRES SEPARATELY. REMEMBER, YOU ARE TO KEEP THE ENVELOPE CONTAINING ALL OF YOUR SUBJECT CARDS, NUMBERED 5, AND CARRY THEM WITH YOU UNTIL YOU HAVE GIVEN ONE TO EACH OF YOUR TEACHERS."

Collect cards 2, 3, and 4, keeping each trio intact. Then collect the pink sample cards and the questionnaires, keeping each of these items in a separate pile.

15. Turn the following materials in at the principal's office, grouped as listed here. Please see that all cards are arranged uniformly, face up. You need not arrange the cards alphabetically.

a) Student stencil cards for students participating in CardPac.

b) Cards 2, 3, and 4, grouped together for each student.

c) Pink sample address cards.

d) General and local questionnaires.

e) Assigned student stencil cards for students absent on CardPac Day.

f) All unused unassigned student stencil cards.

g) All unused student course cards.

h) Extra CardPac envelopes.

Totally New System

Information Center personnel who prepared the Principal's Manual faced the difficult task of explaining a system which would be totally new to the school administrators, teachers, and pupils. Efforts were made to explain every step in detail and to minimize the number of questions which might arise over procedures. Staff members were in daily telephone contact with many administrators just prior to and during the actual administration. Some questions were resolved by correspondence. Some queries concerned a shortage of materials because of an inaccurate pupil count while others concerned administration procedures. A pupil count was originally taken from the count received of those pupils taking Iowa Tests of Educational Development (grades 9-12) and Iowa Tests of Basic Skills (grades 3-9), but this sometimes proved inaccurate. For instance one school system gave ITED in grades 9-12 but did not administer ITBS to pupils in the 7th and 8th grades. A more accurate count of pupils was made in some cases by contacting individual schools. (The Iowa Tests referred to are described in detail in section X of this report.)

One mixup resolved by telephone involved miscoded schools in the populous Des Moines area. Some lengthy conversations enabled the schools to make corrections without returning their materials.

Some mis-mailing through human error also occurred. One packet of materials intended for Marion wound up in Marcus, but a Marcus school official relayed it to Marion. The Center reimbursed the official for the extra mailing cost.

Parcel Delivery Service

The Iowa Parcel Delivery Service was chosen to transport the school materials because of a guarantee of maximum delivery time of 24-36 hours. However, because of the voluminous amount of material involved and some minor processing problems at the Center, delivery time took two-and-one-half weeks. Originally, the materials were to be delivered in April, but the actual delivery took place in May with the bulk of the materials in the hands of the schools by May 20. Priority in delivery was given to schools which closed early.

One of the minor problems involved the ordering of 250,000 envelopes for the packs of CardPac cards to be given to pupils. Because of a crucial time element, the envelopes were ordered from a manufacturer in Davenport through the Measurement Research Center which asked for bids, bypassing the University Purchasing Department which is supposed to solicit bids involving such materials. The order wound up at University Purchasing and the latter criticized the Information Center for not going through proper channels. It was explained that there was not enough time for this, and the Purchasing Department finally approved the transaction after a stern warning regarding use of proper channels.

227,079 Pupils Identified

A total of 227,079 pupils in 695 schools were identified through the administration. In addition, material was sent to 24 schools with 6,110 pupils, but for various reasons these pupils' data were not processed.

Here is a school-by-school evaluation of the 24 schools with district number and building number in parentheses (172 refers to a 7-12 school organization, 209, 218 to a 7-8 or 7-9 organization, and 109 to a 9-12 or 10-12 organization):

1. Collins Community, Collins (1350-172), closed too early to administer CardPac. 142 pupils.

2. Jefferson Junior High, Dubuque (1863-209), school system was defined incorrectly, insufficient supply of materials was received and the additional materials arrived too late. 550 pupils.

3. Washington Junior High, Dubuque (1863-218), same reason as 2 above. 1070 pupils.

4. Dysart Junior High, Dysart (1935-209), closed too early to administer CardPac. 92 pupils.

5. Farragut Community, Farragut (2205-172), closed too early to administer CardPac. 293 pupils.

6. Garner-Hayfield High, Garner (2403-109), closed too early to administer CardPac. 290 pupils.

7. Glidden-Ralston Junior High, Glidden (2520-209), closed too early to administer CardPac. 100 pupils.

8. Hedrick High, Hedrick (2943-109), closed too early to administer CardPac. 96 pupils.

9. L-D-F Junior High, Le Grand (3582-209), closed too early to administer CardPac. 110 pupils.

10. Marion Junior High, Marion (4086-209), closed too early to administer CardPac. 468 pupils.

11. Montezuma High, Montezuma (4437-109), closed too early to administer CardPac. 200 pupils.

12. Montezuma Junior High, Montezuma (4437-209), closed too early to administer CardPac. 179 pupils.

13. Mormon Trail Junior High, Humeston (4572-109), closed too early to administer CardPac. 107 pupils.

14. Nishna Valley Junior High, Hastings (4571-209), closed too early to administer CardPac. 96 pupils.

15. North Scott Consolidated, Eldridge (4874-172), materials returned August 16, 1965, too late for processing. 857 pupils.

16. Norwalk High, Norwalk (4797-109), materials returned incomplete. 149 pupils.

17. Sabula High, Sabula (5733-109), materials returned incomplete. 149 pupils.

18. Sentral Consolidated, Fenton (5868-172), closed too early to administer CardPac. 247 pupils.

19. South Clay High, Gillett Grove (6092-109), materials returned incomplete. 117 pupils.

20. Arlington Junior High, Arlington (6175-209), materials returned August 20, 1965, too late for processing. 100 pupils.

21. Tri-County High, What Cheer (6462-109), closed too early to administer CardPac. 248 pupils.

22. Wapello Junior High, Wapello (6759-209), closed too early to administer CardPac. 155 pupils.

23. Willow High, Quimby (7032-109), materials returned incomplete. 155 pupils.

24. Woodward-Granger High, Woodward (7110-109), materials returned August 18, 1965, too late for processing. 181 pupils.

Sampling Study of Errors

The frequency of errors on cards returned by the schools and processed at the Measurement Research Center was small in a sampling of 12,000 basic data, questionnaire, and course cards from 1,200 pupils.

Only 348 identification number errors--slightly under three percent--were recorded. Of these errors 192 involved marks in the wrong column, 87 were marked too light to be read by the optical scanner, 9 had more than 1 marking in a column, 31 had blank columns, and 29 were properly marked but were bent or for some reason were misread by the machine. Many of these errors were corrected by clerical help, so the actual number of cards rejected totaled less than 50.

Five percent of the schools had not returned their cards two weeks after the June 15 deadline, creating a production problem for the Measurement Research Center, which must hire additional clerical personnel to handle cards as they arrive.

Some of the schools had packaging problems--cards were packed upside down, backward, or, for various reasons, were not in the proper sequence. In some isolated cases, two rows of cards were packed on top of each other with nothing to separate them and they filtered together, requiring extra work to put them in order.

Some of the schools separated cards 2, 3, and 4 (Student Information, Address, and Questionnaire) into stacks of 2's, 3's, and 4's when the instructions called for grouping each pupil's 2-3-4 cards together, but keeping them separate from other cards.

Only one mailing was asked but some schools used two, sending cards 2, 3, and 4 at one time and the #5 Course Cards later.

Tabloid Mixup

Another problem involved the CardPac Tabloid. This was to be taken home by each pupil participating in CardPac to serve as an informational guide for parents. However, none of the schools subscribing to additional Information Center services was sent the tabloid. Involved were 47,000 pupils. In at least one community, criticism of CardPac was blamed on a lack of information which might have been supplied through the tabloid.

The schools already had supplied much of the information required in CardPac through UPDATE Scheduling and Attendance and Mark Reporting Services, so no effort was made to get the tabloid to them.

The schools were in three categories:

1. Schools with 11,000 pupils in Attendance and Mark Reporting already had supplied all information required by CardPac except the questionnaire. Therefore, during the administration of CardPac, these schools only had to furnish the questionnaire information.

2. Schools with 30,000 pupils in Computer Scheduling only had to supply the questionnaire data and add academic marks; the other information already was on file.

3. Schools with 6,000 pupils in Computer Scheduling who had not yet been scheduled for the first time only had to supply questionnaire data and #5 Course Cards tying pupils to teacher; other information already was on file.

Everything was preprinted for this group of schools, thus no stenciling was required during the administration of CardPac. Letters were sent to the schools telling them exactly what was required of them to fulfill CardPac requirements.

Legislative Inquiry

The CardPac information system was the subject of a State legislative inquiry in May, 1965. Questions asked by the legislators and Information Center responses are as follows:

1. What is the initial cost of CardPac?

Answer: One of the tasks of this Information Center research project is to determine costs of a total information system. CardPac represents one segment of this system. At this point we estimate that CardPac will cost in collection materials, reporting forms, and machine processing about 25 cents per pupil. Staff personnel and developmental costs are in addition to this figure. The total developmental cost of CardPac is expected to approximate $200,000.

2. What will be the continued annual cost of CardPac?

Answer: The continued annual cost of the existing CardPac System is expected to be 25 cents or less per pupil, or about $60,000.

3. Will CardPac become part of the schools' permanent record?

Answer: It is anticipated that initially CardPac information will be used by local systems in conjunction with their pupil record system. As the system develops it is likely that many schools may substitute CardPac information for their existing manual record system.

4. How will information from the CardPac Questionnaire be used, by whom, and for what purposes?

Answer a: Information from the CardPac Questionnaire will be used for the following--(1) Completion of State reports, (2) completion of Federal reports, (3) construction of local school data reports, and (4) educational research.

Answer b: CardPac Questionnaire information will be used by--(1) The Iowa Department of Public Instruction; (2) local school personnel including superintendents, principals, guidance counselors, and teachers; (3) educational research personnel on the staff of a college who can present legitimate research proposals that guarantee the appropriate use of data; (4) graduate students conducting research under the close supervision of college personnel. Only data without individual identification will be allowed; (5) other research personnel who can adhere to the strict criteria set for use of the data in a professional manner.

Answer c: CardPac Questionnaire information will be used for the purpose of (1) Determining the status of education in Iowa; (2) determining trends in education; (3) relating pupil characteristics to their achievement, satisfaction with school, school continuation, etc.; (4) identifying potential school dropouts as the data prove reliable; (5) determining teacher-pupil effectiveness under varying conditions; (6) projecting future educational needs for personnel, curriculum, and facilities; (7) facilitating teacher knowledge of pupil needs and characteristics for the purpose of individualizing instruction; (8) improving local programs of guidance, counseling, and testing; (9) establishing normative criteria for guidance and achievement testing programs; (10) determining pupil preparation for employment in various occupations; (11) aiding in the estimation of school district financial needs relative to local tax structure.

5. On what basis can a child of 10, 12, and 14 years be expected to answer questions 32, 35, and 36?

(Question 32: If or when you have children of your own, you would: A1 Insist they do their best in school and continue in school as long as possible; A2 Encourage going to school as long as they wanted; A3 Leave their schoolwork and plans strictly up to them; A4 Discourage them from going to school)--

Answer:

a. On the basis that children are capable of imagining themselves in the role of an adult as evidenced by play-acting behavior of children, they are capable of responding to this item.

b. In answering this question, it is believed that the child reflects his attitude toward continuing his education.

c. The reason for including this item was to investigate its potential for identifying attitudes toward school which are useful in predicting school achievement and school termination. It is not to be used beyond this context.

(Question 35: This year do you feel you have received enough credit--recognition--from your teachers for your work in school? A1 Never; A2 Almost never; A3 Usually; A4 Always)--

Answer:

a. Educators and psychologists unanimously agree that one of the basic needs of human beings is the need for recognition and approval by others. This item attempts to measure the degree to which a pupil has gained a sense of recognition and worth by his teachers.

b. The item may prove effective in identifying causes for poor scholarship among pupils who have the capacity for successful achievement.

c. One basic cause for school dropouts is the lack of personal recognition. This item potentially identifies pupils who are in need of more recognition and approval.

(Question 36: How do your teachers view you? A1 As a top student; A2 A good student; A3 An average student; A4 A below-average student; A5 A very poor student)--

Answer:

a. Pupil perceptions of how teachers view them is related to pupil success and continuation in school.

b. This item has potential for assessing total student body-faculty relationships.

c. Teachers are often unaware of pupil misunderstandings of teacher actions which block effective learning. This item has potential for identifying this condition.

6. Who decided that a child of 10, 12, and 14 years can be expected to answer questions like 32, 35, and 36?

Answer: National experts and University of Iowa faculty members reviewed existing research and information systems in determining items for the questionnaire. While no single item asking for an attitude of a child is, by itself, sufficient to predict his behavior, the accumulation of a series of questions such as this, linked together with other objective data, can aid in the understanding of the child and improve his educational climate.

During the field testing of the items of this questionnaire, children in grades 7, 8, 9, 10, 11, and 12 experienced little difficulty in answering these questions. Pupils at all grade levels experienced little difficulty in expressing their attitudes toward school, study habits, and themselves. Pupils expressed little dissatisfaction in being asked to answer questions about themselves or their school. Pupils participated in development and improvement of the questionnaire and expressed an interest in providing this kind of information. Pupils wishing not to answer a question were permitted to do so.

Feedback

Much of the material fed back to the schools already has been discussed, particularly the Student Data Summary and questionnaire items.

Once the material to be collected and fed back was determined, it was necessary to construct formats for reading the data cards, then magnetic tapes were created from the information and programs written to feed back the information.

An IBM 1401 Computer was used to process the Student Data Summary and the larger IBM 7044 processed the two other feedback reports, making three reports in all.

Included in a four-page letter mailed to principals August 9, 1965, was information on material to be fed back as a follow-up to the initial administration of CardPac.

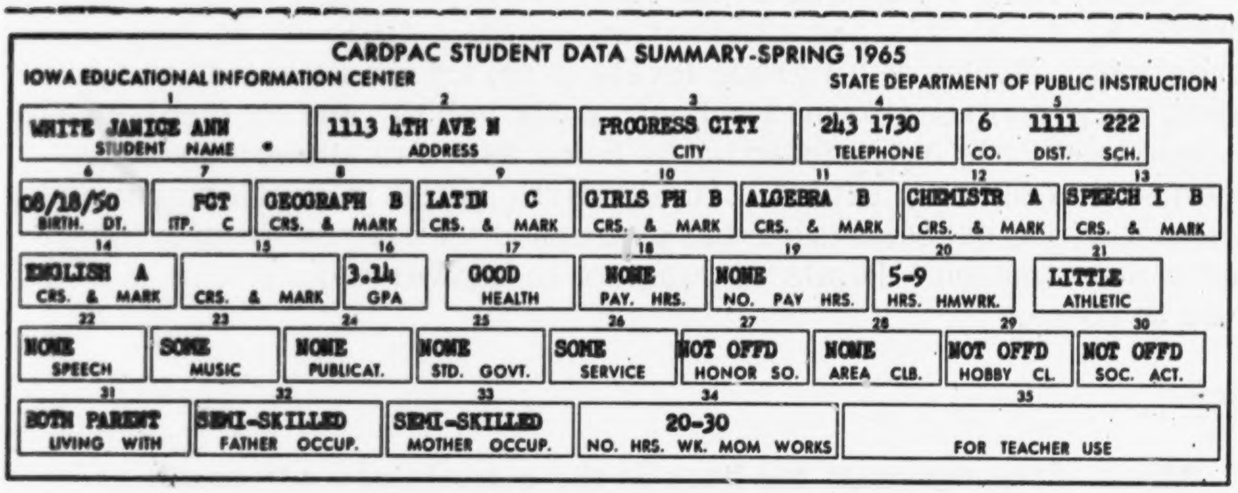
The three types of feedback are:

1. Student Data Summaries
2. An item analysis of questionnaire responses.
3. Frequency distribution relationships between selected items.

Student Data Summary

The Student Data Summary, Figure 10, mailed to schools prior to the fall term of 1965, was produced for each pupil in nine copies so that the principal, teachers, and guidance counselors could have copies for their own files.

Figure 10
STUDENT DATA SUMMARY



CARDPAC STUDENT DATA SUMMARY-SPRING 1965

IOWA EDUCATIONAL INFORMATION CENTER

STATE DEPARTMENT OF PUBLIC INSTRUCTION

1	WHITE JANICE ANN	STUDENT NAME •
2	1113 4TH AVE N	ADDRESS
3	PROGRESS CITY	CITY
4	243 1730	TELEPHONE
5	6 1111 222	CO. DIST. SCH.
6	08/18/50	BIRTH. DT.
7	FCT	ITP. C
8	GEOGRAPH B	CRS. & MARK
9	LATIN C	CRS. & MARK
10	GIRLS PH B	CRS. & MARK
11	ALGEBRA B	CRS. & MARK
12	CHEMISTR A	CRS. & MARK
13	SPEECH I B	CRS. & MARK
14	ENGLISH A	CRS. & MARK
15		CRS. & MARK
16	3.14	GPA
17	GOOD	HEALTH
18	NONE	PAY. HRS.
19	NONE	NO. PAY HRS.
20	5-9	HRS. HMWRK.
21	LITTLE	ATHLETIC
22	NONE	SPEECH
23	SOME	MUSIC
24	NONE	PUBLICAT.
25	NONE	STD. GOVT.
26	SOME	SERVICE
27	NOT OFFD	HONOR SO.
28	NONE	AREA CLB.
29	NOT OFFD	HOBBY CL.
30	NOT OFFD	SOC. ACT.
31	BOTH PARENT	LIVING WITH
32	SEMI-SKILLED	FATHER OCCUP.
33	SEMI-SKILLED	MOTHER OCCUP.
34	20-30	NO. HRS. WK. MOM WORKS
35		FOR TEACHER USE

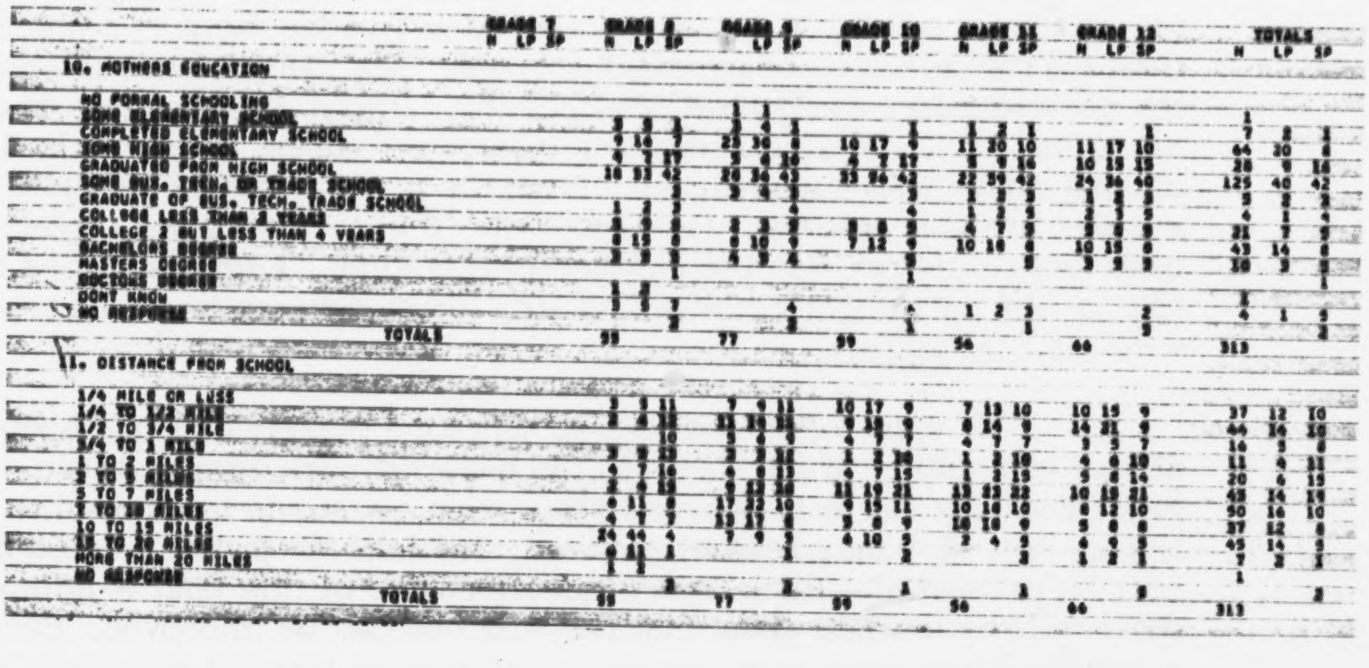
The summary included the following information: Name, address, city, telephone, county, district, and school numbers, birth date, composite Iowa Testing Program score, courses and academic marks, mark-point average, health, hours of work outside of school for pay, hours of work outside of school for no pay, hours of homework outside of school, participation in athletics, speech, music, publications, pupil government, honor society, area clubs, hobby clubs, and social activities, person living with, father's occupation, mother's occupation, and the number of hours the mother works.

Principals were asked to distribute the Data Summaries to the teachers at the beginning of the school year so that each teacher has, early in the year, cumulative information about each pupil in his class. Teachers may then be better prepared to offer individualized aid and instruction. It was suggested that principals may want to prepare booklets for their teachers containing the CardPac Student Data Summaries. Others will prefer that those teachers wishing to utilize the reports receive them from the principal or guidance counselor as needed. However the dissemination of the material is handled, the Student Data Summary represents progress in reducing teacher time spent in searching through cumulative folders for pertinent information.

Item Analysis of Responses

The second feedback item mailed to principals and superintendents October 21, 1965, was a computer printout Item Analysis of Responses to the 71 items in the CardPac Student Questionnaire listing total responses by grades within the respective schools and comparable statewide totals (Figure 11). The Questionnaire is attached as Appendix A and the complete statewide totals for the Item Analysis as part of Appendix B.

Figure 11
ITEM ANALYSIS OF RESPONSES
(Individual School)



A four-page "Administrator's Supplement to CardPac Feedback, Spring, 1965" accompanied the Item Analysis of Responses going to each principal and superintendent. As explained in the supplement, each of the 71 items in the questionnaire was designed to gather pupil information that might conceivably contribute to a better understanding of some educational problem. The Item Analysis presented responses of the pupils in a particular school by grade, giving the number and percent of pupils selecting each of the suggested answers to each question. The report also showed the percent of the entire Iowa public secondary school population in the same grade who selected the same response.

Administrators were told that a study of this report might prove useful to local school authorities in finding solutions to known problems or in identifying new ones. Perhaps, also, the analysis may stimulate some fresh thinking about possible general improvements in the local educational offering.

For example, if there were local concern over a possible imbalance in the curriculum between vocational and so-called college preparatory courses, it would certainly be helpful to have an objective description of the student body in terms of : (1) The amount of schooling beyond high school that the pupils hope to obtain; (2) the kinds of colleges they hope to attend; (3) the vocations or professions they expect to enter; (4) the extent to which they are prepared to finance their own higher education; (5) the influence of parental desires. The information obtained from the questionnaire could shed considerable light on such factors in the local situation. It would also reveal, in concrete figures, whether the local student body differs significantly from the general school population in respect to these factors. Hitherto, few, if any, Iowa school systems have had really precise information of this kind. Administrators have had to rely on subjective impressions, which may not be at all consistent with the real facts.

The value of an analysis of this kind clearly depends upon the nature and quality of the items in the questionnaire administered. A great deal has yet to be learned about what questions most need to be asked, how they may best be phrased, and how the data collected may best be presented. Each time a questionnaire of this kind is administered, more will be learned about how the next one can be improved. Each time a report of this kind is prepared, much will be learned about how to make the next more useful and more readily interpretable.

The administrators were told that the questionnaire is actually a by-product of the basic CardPac System and was prepared with surprisingly low additional expense. Utilizing on a very large scale an automated procedure for all Iowa schools, a 7044 computer and high-speed printers produced the two larger feedback reports in an average time of three minutes for each report per school.

Feedback Format

In the Item Analysis the results of the local administration are printed by grade level in the same sequence as the items appeared in the spring questionnaire. Below each item are reproduced the possible responses given in the questionnaire. The pupils' answers are summarized to the right of each item.

For each grade level, three columns of figures appear. The "N" column shows the actual number of local pupils who chose each of the possible responses to the question. The second column, labeled "LP," shows what percent of the local pupils chose each response. The third column, "SP," lists the percent of the pupils who chose each response in the State as a whole.

Percents are a familiar and easy medium to use in such comparisons. With very small groups, however, the use of percents can be misleading. In such cases it is better to refer to the actual counts in the "N" column.

Interpretation of the Report

Opinions may vary as to the most meaningful grouping of the questionnaire items for consideration of the results. This will depend, to a great extent, on what comparisons the local school administration is interested in making. In general, however, the contents of the questionnaire touch upon four broad areas of information: (1) Biography and environment, (2) activities, (3) aspirations and expectations, and (4) attitudes, perceptions, and personnel relationships.

An outline of these areas and the questions pertinent to each follows:

Area 1--Biography and environment. This includes such characteristics as size of family, parents' occupational and educational level, health, work, study, driving habits, etc.

Item No.	Information
1-5	Size of family, placement of pupil in family
6-8	Parents' occupation
9-10	Parents' education
11-12	Distance to school; mode of transportation
13-14	Pupil time spent in work
15	General health
16	Home study habits
56	Social Security Number
57-61	Auto driving habits

Area 2--Pupil activities

Item No.	In-School Activities
18	Athletics

19	Speech, dramatics
20	Music
21	Publications
22	Student government
23	Service clubs
24	Honor societies
25	Academic clubs
26	Hobbies
27	Social activities

Outside Activities

62	Watching television
63	Reading newspaper
64	Listening to radio
65	Reading magazines

Area 3--Aspirations and expectations. This includes educational and occupational goals in terms of both rosy dreams and more realistic probabilities. In considering the responses it is well to remember that the aspirations of a pupil are colored in many instances by the relative glamour of the choices offered.

Item No.	Goals
37	School marks
38	Job success
39-40	Educational goals
41-42	Occupational goals (boy)
43-45	Occupational goals (girl)

Area 4--Attitudes, perceptions, and personal relationships. This includes the pupil's view of his own standing, his attitudes toward schoolmates, teachers, and schoolwork, and certain pupil-parent relationships affecting study habits.

Item No.	Insights
33	Student relationships
29-30, 35-36	Teacher relationships
17, 28, 32	School relationships
34, 46-47	Study and homework
52-55	Best and least-liked subjects
31, 48-51	Parental attitudes

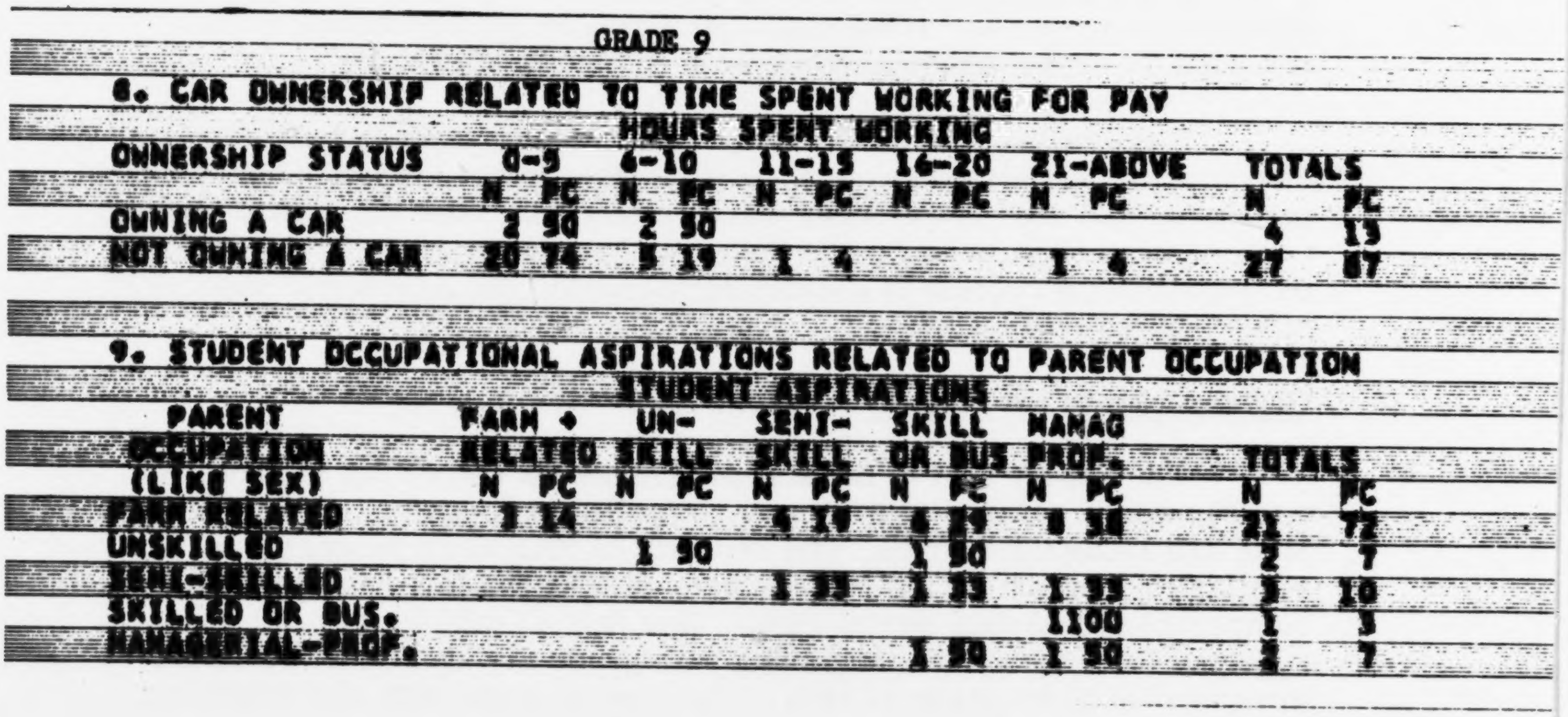
Seniors only responded to six questions related mainly to post-high school education plans.

Item No.	Future Plans
66	Finance
67-68,70	Type and location of school preferred
69	Applications for admission
71	Previous transfers

Frequency Distributions of Relationships

Two portions of the feedback--Student Data Summary and Item Analysis of Questionnaire Responses--have now been described. The third portion--Frequency Distributions of Relationships for Selected Items--was delivered to superintendents and principals in February, 1966. The State totals and appropriate comments are attached as part of Appendix B, "The CardPac Student Questionnaire Summaries, 1965." An example of an individual school frequency distribution of relationships is shown in Figure 12.

Figure 12
FREQUENCY DISTRIBUTIONS OF RELATIONSHIPS FOR SELECTED ITEMS
(Individual School)



GRADE 9

8. CAR OWNERSHIP RELATED TO TIME SPENT WORKING FOR PAY

	HOURS SPENT WORKING											
OWNERSHIP STATUS	0-5		6-10		11-15		16-20		21-ABOVE		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
OWNING A CAR	2	50	2	50							4	13
NOT OWNING A CAR	20	74	5	19	1	4			1	4	27	87

9. STUDENT OCCUPATIONAL ASPIRATIONS RELATED TO PARENT OCCUPATION

	STUDENT ASPIRATIONS											
PARENT OCCUPATION (LIKE SEX)	FARM + RELATED		UN- SKILL		SEMI- SKILL		SKILL OR BUS		MANAG PROF.		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
FARM RELATED	3	14			4	19	6	29	8	38	21	72
UNSKILLED			1	50			1	50			2	7
SEMI-SKILLED					1	33	1	33	1	33	3	10
SKILLED OR BUS.									1	100	1	3
MANAGERIAL-PROF.							1	50	1	50	2	7

Thirteen of the 71 questionnaire items were chosen for the frequency distribution study. The criteria for this selection were: (1) Is the content of the item of strong interest to school personnel, and (2) is it revelatory of pupil behavior in specific school and home situations? Statistical results did not influence the selection.

The report shows how pupils classified at various levels of achievement responded to each of nine selected items. Two academic measures were employed in this classification. One is the mark-point average (MPA), also commonly called grade-point average. This is the unweighted average of the pupil's academic marks assigned by teachers during the second semester of 1964-65 as reported to the Information Center by the schools. The other measure is the percentile rank of the pupil composite score on either the Iowa Tests of Educational Development in the fall of 1964 or the Iowa Tests of Basic Skills in January of 1965. (In general, senior high pupils took the former battery, junior high pupils the latter.) Questionnaire data, MPA, and percentile rank on the Iowa Tests were available for 172,789 public school pupils in grades 7-12. The statewide data reported for these nine items are based on these 172,789 cases.

For each of the additional four selected items, the report shows how the responses are related to a personal or environmental factor revealed by responses to another item in the questionnaire.

The analyses not only show relationships between variables, but also indicate the distribution of each variable in the Iowa secondary school population and also in the local school situation. With these twin descriptions school officials can make State and local comparisons and assess the possible interaction of certain demographic and scholastic aspects in either school population.

Organization of the Report

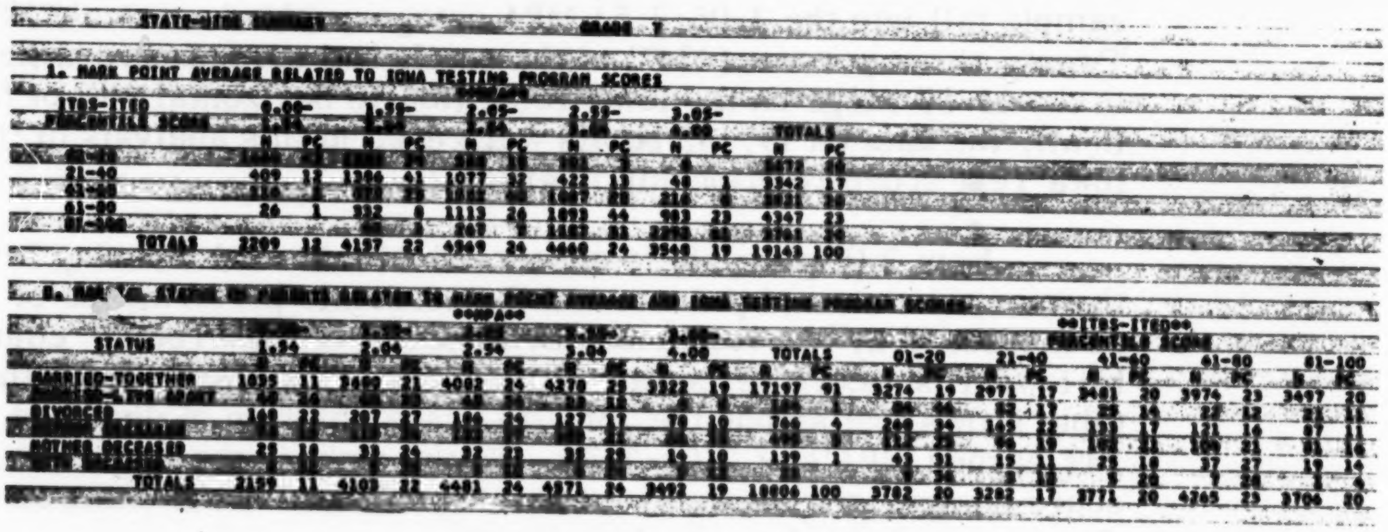
The report sent to the schools (Appendix B does not include local totals), was organized in a manner to facilitate comparisons between State and local summaries. The two sets of data were presented in similar formats on facing pages, State data on the left-hand page and comparable local data on the right. One pair of pages appeared in sequence for each grade, beginning with grade 7. The final two items were answered by grade 12 only. Comments on the data and suggested interpretations of the statewide distributions preceded the related pages of tables. No attempt was made to interpret the summaries of individual school districts.

For schools that did not participate in the Iowa Testing Programs last year, the local summary was necessarily incomplete. For those schools the questionnaire responses could be only to the MPA.

How To Read the Tables

The arrangement of the information in the tables can best be explained by specific examples. First, the State report on Item 1 in grade 7 in the table shown in Figure 13.

Figure 13
STATE REPORT, ITEMS 1, 2 IN FREQUENCY DISTRIBUTIONS OF RELATIONSHIPS



This item examines the relationship of the mark-point average to composite scores on the Iowa Tests. The pupils were classified according to MPA into five groups of 0.00-1.54, 1.55-2.04, 2.05-2.54, 2.55-3.04, 3.05-4.00, respectively. The 2209 cases with MPA's of 0.00-1.54 were then sorted according to composite percentile score on either the Iowa Tests of Basic Skills or the Iowa Tests of Educational Development, and the percent of this sub-group falling into each of five score categories was determined. The table indicates that 1660 or 43% of the pupils with ranks of 20 or below on the Iowa Tests had MPA's of 1.54 or below. Twenty-four percent (4569 cases) of the entire State sample fall into the 2.05-2.54 MPA category (third vertical "N" column). Twenty-three percent (4347) of the pupils had earned percentile scores in the 61-80 range on the Iowa Tests (fourth horizontal row of figures). In all, the data on 19,143 pupils were used in this analysis of the MPA-Iowa Test score relationship in grade 7.

Item 2 (Figure 13) is concerned with the relationship between the marital status of parents and the academic performance of the pupils as measured by two variables, by MPA left of the "Totals" column and by Iowa Test score percentile at the right. The third row in the MPA table shows that among the 766 7th grade children of divorced parents, 24% earned MPA's of 2.05-2.54. To the right in the same row, the test score comparison shows that 133 (17%) of these same children had percentile scores of 41-60 on the Iowa Tests.

It is important to note that, within the body of each table, the percents given are percentages of the row totals, not of column totals. For example, under Item 1, 1660 is 43% of 3872 (reading across), not of 2209 (reading down). The only percents that may be added vertically are those in the TOTALS column. Because of rounding error, the percents for a particular row may not total exactly 100.

Trends in the data will generally be reflected by a gradual change in the percents across a row or on a diagonal from one corner of a table to the opposite corner. For example, in the data for Item 1 as one moves across the first row of figures from left to right, the percent of pupils decreases from one category of the MPA to the next. In the fifth row (pupils with percentile scores from 81 to 100) the percent increases from level to level of the MPA. This indicates a generally positive relationship between mark-point average and percentile rank on the Iowa Tests. The relationship is not perfect, of course. There are some pupils who rank well in the testing program but receive low marks in their school work. Conversely, some who have high mark-point averages do not achieve as highly on the standardized tests.

The local school summaries may be read in a similar manner. However, caution should be used in interpreting local percents that are based on very small numbers of pupils. Some discrepancies may appear to exist in numbers and percents in apparently related tables. Some schools failed to report academic marks in usable form and their pupils are not included in the total population for tables comparing mark-point averages. Other minor discrepancies in populations may be traced to errors in marking cards.

In the comment accompanying tables, some reasonable interpretations of the statewide summaries are offered. These are neither comprehensive nor all-inclusive. Interested school personnel will undoubtedly observe trends which are considered in these summaries. In some cases a variety of interpretations of the data may be possible. Consideration of alternative explanations of the trends should have the salutary effect of provoking further exploration into the causes and implications of the relationships under study.

Feedback Problems

The Item Analysis and Frequency Distribution feedback reports lost timeliness because of delays in processing and delivering them to the schools. There were various reasons for this, including the fact that five percent of the schools were unable to meet the June 15 deadline for return of materials. Also, the Item Analysis was rerun on the computer after a change in format was decided. Originally the local and statewide norms were to be sent to the schools separately; later, a decision was made to print the statewide norms alongside the local norms for each school. Two other changes also were made before the Item Analyses were rerun. It was discovered that questions concerning occupation answered by boys only and girls only had percentages based on the total school population. Also, questions answered by 12th grade pupils only were computed originally on percentages based on the total school population. These situations were corrected before the finalized report was run on the computer.

A computer rerun of the Frequency Distribution report also was necessary for two reasons. First, the mark-point average for pupils who had no marks reported was computed incorrectly as zero by the computer. This group of pupils for whom no mark-point averages were available had to be weeded out of the statewide totals and the appropriate totals rerun. Second, the report compared responses to selected Questionnaire items with mark-point averages and scores on the Iowa Tests of Educational Development and Iowa Tests of Basic Skills. Originally, when either mark-point average or test scores were not available, the pupil was not included in the other distribution. A change was made to treat both comparisons individually for a pupil so that if the test scores and mark-point average were not available, the pupil would appear in the comparison of item responses and test scores, but not in the comparison of item responses and mark-point average. The statewide norms were rerun and selected schools reprinted to correct this situation.

Problems also were encountered once the feedback reports had been delivered to the schools. Some of the material proved inaccurate; in fact it was learned after careful observation that data for a particular school would be sent to another school and vice versa. In some cases the trouble was traced to errors on the part of the school administrators while other inaccurate data were believed to be the result of errors made by Measurement Research Center in processing the material sent in by the schools. Every effort was made to trace errors to their source to prevent repetition and also to correct improper feedback data.

Other isolated problems included that of a principal who discovered that the completed CardPac materials he had shipped to IEIC for processing in the spring were returned to him during the fall CardPac mailing and had never reached Iowa City. Apparently the delivery service had failed to make the delivery in Iowa City for some reason, then had held the materials until fall and returned them to the school. This necessitated the school starting from "scratch" in the fall in its administration of CardPac.

A visit to one school which had a heavy administrative and faculty turnover disclosed that Student Data Summaries had never been unpacked. These would have given the new administrators and teachers valuable information about the individual pupils.

News Releases

Seven releases to news media of the State and two magazine articles were prepared from the feedback responses and distributed. With the exception of one magazine article which had not yet appeared at the time the report was written, all other stories were published widely in the State.

A general five-page announcement of feedback to schools was multilithed for direct mailing by Measurement Research Center to 418 daily, weekly, or biweekly newspapers and 85 broadcast facilities in Iowa. Four copies of the release were returned to the Information Center by the Post Office, two from newspapers that had discontinued publication, one from a radio station no longer in operation, and one erroneously addressed. Although the release was prepared for mailing on October 18, a December 2 postmark on two of the returned envelopes and at least one December publication of the story indicates that some of the releases were not mailed on schedule.

A story announcing distribution of the school feedback was clipped from nine newspapers. Four papers ran the release almost verbatim with only minor copy changes or with an extra paragraph inserted identifying local participating schools.

Papers in Waukon, Ottumwa, and Pocahontas wrote their own stories based on figures obtained from the local feedback and included extensive portions of the release for background information. One paper--the Iowa City *Daily Iowan*--cut and rewrote extensively. The Grand Junction Free Press summarized local responses without comment or background copy from the release.

All stories were favorable in use of copy verbatim or in selection of quotes. The Waukon Republican-Standard displayed the story prominently with an eight-column banner headline, and the Seymour Herald carried a favorable two-column headline "CardPac System Offers Quick Answers To School Questions With Automation." The Pocahontas Record-Democrat story, under the two-column head "Automation Aids Local School Administration--CardPac System" was most favorable, describing CardPac as ". . .bearing fruit for county school administrators," ". . .gives administrators an insight into the general attitudes and background of students." The paper mentioned that the CardPac System had been attacked in some quarters, but credited its favorable evaluations to Superintendent Jack Hoenshel and Principal Ed Christian of the Pocahontas Community School.

The general news release follows:

"The most comprehensive profile of Iowa public secondary school pupils ever compiled is now being distributed to school principals and superintendents, according to Dr. Ralph A. Van Dusseldorp, Associate Superintendent of Systems for the Iowa State Department of Public Instruction and Associate Director of the Iowa Educational Information Center.

"Summaries of pupil responses to 71 questions administered last May as part of the CardPac System of Educational Accounting have been prepared by the Educational Information Center at The University of Iowa. Each principal of a participating school will receive a report listing the total responses by grade within his school and comparable statewide totals. Superintendents will receive reports for the schools within their districts and the State totals.

"The CardPac Questionnaire Feedback summarizes responses from 227,079 pupils in grades 7 through 12 from 695 public secondary schools. Van Dusseldorp said that the individual school copies of the report were prepared from magnetic tape by computers and high-speed printers in an average time of three minutes per school.

"The CardPac Student Questionnaire sought information on four broad areas of student life:

"(1) Biography and environment,

"(2) school-related activities,

"(3) educational and occupational aspirations and expectations, and

"(4) school-related attitudes and perceptions.

"Dr. Robert W. Marker, Director of the Educational Information Center, described the CardPac Feedback as valuable to local school authorities in seeking solutions to known problems and identifying new ones. He said the analysis may also stimulate new ideas for possible general improvements in the local educational offering.

"As an example, Marker said that local administrators concerned with a possible imbalance between vocational and so-called college preparatory courses can make decisions based upon an objective description of the student body in terms of:

"(1) The amount of schooling beyond high school that the pupils hope to obtain, "(2) the kinds of colleges they hope to attend,

"(3) the vocations or professions they expect to enter,

"(4) the extent to which they are prepared to finance their own higher education,

"(5) the influence of parental desires on their educational plans, etc.

"In the past, he said, few administrators have been able to obtain precise information of this kind on which to plan and base decisions. They have had to rely on subjective impressions which may or may not be consistent with the real facts. The CardPac Questionnaire Feedback provides such information on the local student population and, in addition, on the general school population of the State for comparison purposes.

"Analysis of responses to other items on the questionnaire may be helpful to administrators in dealing with the problems of dropouts, the gifted child and others, Marker said. The original questionnaire items were drawn up from the recommendations by superintendents, principals, guidance counselors and teachers in meetings with professional staff members of the Educational Information Center.

"Educators hope, through responses to patterns of questions, to identify and assist the potential dropout in time to keep him in school. It seems obvious that the pupil who feels that his parents have no interest in his school work, that his teachers consider him a poor student, that he has numerous unpleasant experiences in school, and that he will be quite successful in the labor market is already a potential dropout. He may be mistaken on each point, but if he thinks all or part of them are true he may still seek the easy way out.

"With an annual questionnaire administered through the CardPac System, educators will be able to study development and changes in such attitudes. Administrators receiving the 1965 Feedback will have an opportunity to express opinions and suggestions for improving future questionnaires and reports.

"The questionnaire is only a part of an overall process known as the CardPac System of Educational Accounting. The CardPac System is an automated system of data collection and processing developed by the Iowa State Department of Public Instruction and the Iowa Educational Information Center. It takes advantage of recent developments in high-speed electronic computers and optical scanners to standardize and facilitate the reporting of required information by local schools.

"From magnetic tape files in Iowa City, the CardPac Processing Service can prepunch information into machine-readable data cards. Administrators, teachers and students can then make corrections or additions by marking appropriate card areas with an ordinary pencil. Optical scanners read the cards at speeds up to 36,000 per hour and the computers update the magnetic tape files.

"The ability to reproduce information from the files quickly and easily can relieve teachers and administrators of much tedious repetition of identical information. Much of the raw data--without identification as to schools or individuals--will be available to researchers and professional organizations, sparing schools from repeated questionnaires asking essentially the same information.

"Although computerized systems of educational data processing are widely used by local districts throughout the United States, Iowa is the first state to produce an operational statewide system. Research and development of the Iowa CardPac System has been financed primarily through grants from the U. S. Office of Education and the Ford Foundation.

"The Iowa Educational Information Center, which developed and administers the CardPac System, is a joint enterprise of the Iowa State Department of Public Instruction and the University of Iowa College of Education. The Center functions under supervision of a Coordinating Board composed of Paul F. Johnston, Superintendent of the Department of Public Instruction, Howard R. Jones, Dean of the College of Education, and E. F. Lindquist, Director of Iowa Testing Programs."

Midland Schools, a bi-monthly magazine widely read by Iowa school people, published a feedback story in its January-February, 1966, issue entitled "How Study and Teachers Rated by Iowa Students." Here is that article:

"For the first time, Iowa citizens are in a position of knowing certain facts about the State's public secondary school students that have never been available before on a mass basis, thanks to the CardPac System of Educational Data Collection.

"Last spring, a questionnaire was administered to 227,079 students through the combined efforts of the local schools, the State Department of Public Instruction, and the Iowa Educational Information Center of The University of Iowa. Responses to 71 questions were tabulated by computers and the accumulated data fed back to local school administrators.

"The purposes of this article are three-fold: (1) To present certain significant statewide responses; (2) to present generalizations about secondary pupils derived from the responses, and (3) to enlist the aid of Iowa teachers and school administrators in the form of comments for the future applications of questionnaire-type information. The comments may be sent to CardPac Coordinator, Iowa Educational Information Center, The University of Iowa, Iowa City, Iowa 52240.

"Items in the questionnaire have been divided into four areas--biography and environment, school-related activities, educational and occupational aspirations and expectations, and school-related attitudes, perceptions, and personal relationships. This article is confined to the latter grouping on attitudes, perceptions, and personal relationships.

"Three-fourths of the 7th through 12th graders spend from one to nine hours a week doing homework outside of school; about the same number think teachers assign the right amount of homework.

"Contrasted with the three-fourths figure backing the right amount of homework, only a fifth of the students felt too much homework is assigned.

"Asked how many hours of homework they did per week, 9 percent said none, 46 percent 1 to 4 hours, 29 percent 5 to 9 hours, and an additional 10 percent 10 to 14 hours.

"Fifty-four percent of the 7th graders reported that they did 1 to 4 hours of homework, leading in this respect, with the percentage tapering off to 39 percent of the seniors. The juniors led in the 5 to 9 hours group, 32 percent responding, while only 26 percent of the 7th graders said they hit the books this much outside of school.

"The student-parent relationship regarding homework was illustrated by responses to several questions.

"Almost half of the students, including 55 percent of the 7th graders, said their parents were glad to help them with their homework; however, 38 percent said the same thing but qualified their answer by indicating that their parents often did not know how to assist them. Grades 9 and 10 had the highest incidence of parents not knowing how to help their children with homework.

"All but 18 percent of the students said their parents encouraged them to do their homework if it was not done on their own initiative. Nearly a fourth of the students said their parents frequently argue with them about getting their homework done, with the highest percentage (27) in the 7th grade.

"Half of the parents feel the teachers give about the right amount of homework, according to their children, while 14 percent of the parents supposedly feel the teachers assign too much out-of-school study. Seven percent of the parents are listed as thinking their children should have more homework.

"All but 14 percent of the students said their parents took an interest in their schoolwork.

"One question placed the students in the hypothetical position of being parents. Almost three-fourths responded that under these circumstances they would insist their children do their best and stay in school, including a high of 82 percent in the 7th grade and a low of 63 percent in the 12th grade. About one-fifth of the students said they would encourage their children to go to school as long as the children wanted.

"The questionnaire also asked the students for their sentiments about classwork, and two-fifths said they did their very best in all courses while almost half said they did their best in some courses but only tried to get by in others.

"As for school attitude, almost a fifth of the students 'like school very much,' while 48 percent find it 'enjoyable most of the time' and 29 percent 'don't particularly like or dislike school.' The quoted portions are from the actual question.

"The percentage fluctuated up to 7 percent among all 6 grades with 20 percent of the 7th graders liking school very much but only 14 percent of the 11th graders showing this much enthusiasm. Of those enjoying school most of the time, half of the 11th graders responded and the lowest percentage--45--was in the 7th. The 8th graders lead in the 'don't particularly like or dislike school' group, and the seniors had the lowest percentage.

"As for general attitude toward studying, here were the responses: Three percent really like studying, 28 percent like it most of the time, 51 percent can't say they like or dislike it, and 13 percent dislike it most of the time.

"There were several questions asked regarding the student-teacher relationship with most responses putting teachers in a favorable light.

"About four-fifths of the students feel they are treated fairly and friendly by the teachers; another 12 percent said they are treated fairly but most teachers are personally unconcerned.

"Eighty-five percent of the students said teachers give individual help when asked, but 13 percent said the teachers did not. At the same time, about three-fourths of the students said they usually receive enough recognition from the teachers and another 15 percent said they always do.

"When asked how teachers viewed them, the answer of 5 percent was 'as a top student,' 30 percent 'a good student,' 52 percent 'an average student,' 8 percent 'a below-average student,' and 1 percent 'a very poor student.'

An analysis of stories distributed to all news media in the State revealed that a feedback story on pupil use of automobiles and bicycles for transportation to school was carried verbatim by at least eight newspapers. One paper--the Cedar Rapids Gazette--also referred to the story in an editorial entitled "Obsolescent Legs."

The news release on pupil transportation follows:

"The car apparently is 'in' and the bicycle 'out' with today's Iowa high schoolers.

"Almost two-thirds of the public school students in grades 10 through 12 have a driver's license and 23 percent a car of their own, according to State Department of Public Instruction figures compiled from responses to the CardPac Questionnaire last spring.

"An interesting aspect is the fact that less than 1 percent of the juniors and seniors rode bicycles to school. Surprisingly, only 1 percent of the sophomores and 4 percent of the 9th graders rode their bikes.

"Seniors led in 2 categories, 82 percent indicating they have a driver's license while a third had cars of their own. One percent of the 7th graders who answered the Questionnaire have driver's licenses, and the percentage is progressively higher the further along the student is in school.

"When asked if they have a learner's permit to drive a car, 16 percent of all 7th through 12th graders responded that they did. More sophomores--34 percent--answered yes than any other grade level.

"Thirty-six percent of the students said they drove their parents' car frequently, the junior class leading in this category with 62 percent.

"Fifteen percent of the students drove to school at least once a week with a high of 39 percent among the seniors.

"More students went to school by school bus than any other means of transportation--36 percent. Thirty percent walked and 13 percent used the family car while only 4 percent rode bicycles.

"Nineteen percent of the students lived 2 to 5 miles from school and an additional 15 percent were 1 to 2 miles away. However, 39 percent lived within a mile of their school.

"The information listed, historically significant because of the number of Iowa students involved, was gathered with the close cooperation of the local schools, the Department of Public Instruction, and the Iowa Educational Information Center of The University of Iowa."

The Department of Public Instruction's Publications Office offered the Des Moines Register first exclusive to a release on college aspirations of pupils. The Register did not use the story and it was eventually released to other papers through the State Department's Publications Office. The story appeared in several papers.

The story is reproduced here:

"Forty-nine percent--or almost half--of the State's public junior high and senior high school students hope to earn a college degree, Department of Public Instruction figures reveal.

"This figure and others related to post-high school educational plans were compiled from responses of 227,079 students completing the CardPac Questionnaire given last spring with the help of the Iowa Educational Information Center.

"Responses to questionnaire items on college aspirations and expectations disclosed, for the first time, many facts that have special meaning for school people and parents. For example, 16 percent of the fathers and 6 percent of the mother completed college, but almost half of their children aspire to this goal.

"An examination of college aspirations by grade level showed a steady increase in number as the students advanced in school. Forty-six percent of the 7th graders gave college as a response while 54 percent of the seniors hoped to earn college degrees. Twenty-four percent of these seniors hoped to achieve a Master's Degree or more.

"Questionnaire answers also gave some indications of how Iowa students expected to finance their education and where they expected to go to school.

"Twenty-three percent of the seniors with further school ambitions said their education would be financed by parents, scholarships, grants, or savings. Thirty-five percent--13,163 --said they expected to work or borrow part of the money; 13 percent anticipated working or borrowing all of the money, and 6 percent did not know at the time how they would finance their education.

"When asked where they expected to go to school, 16 percent said in their hometown or nearby in order to live at home. An additional 31 percent said they would go to school in Iowa but live away from home. Other responses: 14 percent, outside but in a midwestern State; 1 percent, eastern State; 1 percent, southern State; 2 percent, western State. Ninety-four seniors--less than 1 percent--indicated they would be studying outside the United States while at the same time 7 percent had not made up their minds where they would be going to school.

Another news release on course preference and girls' careers was given widespread play:

"Almost two-fifths of the girls in Iowa's public secondary schools would like to pursue a professional career, another 15 percent would like to be full-time housewives and an additional 15 percent say they'd like clerical jobs.

"These facts were learned by the State Department of Public Instruction and the Iowa Educational Information Center at The University of Iowa in tabulating responses from 110,245 girls who answered the CardPac Questionnaire administered last spring in grades 7 through 12.

"A professional career was defined in the Questionnaire as including these professions: Actress, accountant, artist, dentist, registered nurse, physician, engineer, lawyer, librarian, scientist and teacher.

"More 8th graders (41 percent) than any other grade level gave a professional career as an occupation they'd like to follow. The least interest in this choice--37 percent--was shown by 7th and 12th grade girls. Almost one-fifth of the juniors and seniors listed clerical work as their occupational goal while almost one-fifth of the senior girls gave housewife. These figures are based on questions about occupational aspirations.

"When the girls also were asked the same questions considering the occupational opportunities they expect to have and the education they expect to get, the percentages changed quite a bit. Professional work was still the leading respose, but only 29 percent gave this answer, 10 percent less than the corresponding aspiration figure. Twenty-four percent listed housewife and 16 percent clerical worker compared with corresponding figures of 15 percent in each category.

"More than a third of the girls said they planned to pursue a career for a while, then become a homemaker, while an additional 30 percent expected to start a career, then combine it with homemaking. Fourteen percent listed both career and homemaker as a future vocation, 10 percent gave homemaker, and 6 percent said they planned a lifetime career other than that of a homemaker.

"When the aspirations of the girls were compared with the occupational level of their mothers, interesting contrasts were observed. Three-fifths of the mothers of the girls answering the Questionnaire are housewives only while 11 percent are clerical workers. Only 5 percent have professional occupations compared with 39 percent of their daughters who have this as a goal."

Three other articles also were treated very favorably by the State's media.

Most-Liked And Least-Liked Subjects

"What subject do Iowa's public secondary school students like the most? What subject do they dislike the most?

"The answer to both questions is mathematics.

"This was revealed by responses from 227,079 students in grades 7 through 12 to the CardPac Questionnaire administered last spring with the cooperation of the schools, the State Department of Public Instruction, and the Iowa Educational Information Center of The University of Iowa.

"Sixteen percent of all students like math subjects--arithmetic, algebra, geometry, and general math--the best while almost one-fourth responded just the opposite.

"More ninth graders--almost one-fifth--chose mathematics as their best-liked subject while one-fourth of the 10th graders put it in the least-liked category.

"English, the sciences, and industrial arts tied for the distinction of being the second most-liked subjects. English also shared with social studies the distinction of being the students' second choice in the least-liked category.

"The students also were asked why they had made these particular choices. Contrary to what might be expected, liking the teacher or finding the subject easy were listed by only a small percentage of students as reasons for liking a particular subject the most. One-half of them prefer the subject because they find it interesting and stimulating. Almost one-fifth responded that they are good in the subject while the third highest response came from students who said they will need what they learn in the subject later in life.

"Two-fifths find their least-liked subject too hard for them while almost a fifth just don't like it and 15 percent find it boring. Almost a

10th of the students can see no value in the subject; 7 percent gave as their response dislike of the teacher."

Extracurricular Activities

"Social events, athletics, and music--in that order--are the most popular extracurricular activities in Iowa's public secondary schools, the State Department of Public Instruction has learned through its system of educational data collection called CardPac.

"The 227,079 students in grades 7 through 12 responded to a CardPac Questionnaire administered last spring through the Iowa Educational Information Center of The University of Iowa. They also were given a list of seven other activities and ranked their participation in these in this order: Service clubs (Junior Chamber of Commerce, Y-Teens, FFA and FHA, Key Club, etc.), speech and dramatics, academic clubs (Latin, science, mathematics, etc.), hobby clubs (photography, chess, etc.), publications (yearbook, school newspaper), student government and honor societies.

"Three-fourths of the students said they participate in school dances, parties, and other school-related social functions while 58 percent take part in either intramural or interscholastic athletics, and 44 percent are active in music groups such as band, orchestra, choir, or glee club.

"Principals have been sent tabulations showing the popularity of their extracurricular activities based on participation and also how individual schools compare with statewide norms. With this information available, a principal may wish to make an adjustment in the extracurricular activities offered by his school. For example, if his school has not had or perhaps not stressed an activity which is quite popular in most schools, he may upgrade its importance and act accordingly.

"If a particular school's student body participates less in many of these activities than most schools as indicated by statewide totals, a principal may look to other items in the questionnaire for a possible answer. As an example, students also were asked how much they work outside of school and how far they live from school. These factors certainly could determine the amount of time devoted to extracurricular activities.

"If a particular school's students are weak in certain fields such as Latin or mathematics, this also may influence a principal to consider establishing or strengthening academic clubs in these areas.

"Also, if a school does not seem to have as much participation as the principal believes it should in a particular activity, he may move to broaden its base to attract more students. Or principals whose schools do not have an honor society may, after studying the responses to the CardPac Questionnaire, decide such an organization would provide an added academic stimulus.

"Much of this, of course, is pure speculation. The main point however, is that Iowa's school administrators now have information in a form that has not been available before on which to base policy decisions. If used wisely, this information can be an administrator's 'best friend!"

TV, Newspaper, Radio Habits

"Are high school students watching television more and studying less? If so, does this mean they also are devoting less time to newspapers and magazines which could be definite study aids?

"These are difficult questions to answer, but the State Department of Public Instruction is helping local Iowa school officials evaluate the situation through the CardPac information retrieval system.

"By asking for television, reading, and home study habits in a questionnaire administered last spring to 227,079 public secondary students, the State Department of Public Instruction and the Iowa Educational Information Center of The University of Iowa gathered data that help provide each school the opportunity to offer the most effective educational program possible.

"Each school administrator is supplied with total responses to questions by grade level within his school and also has the chance to compare these with statewide totals, thus knowing where his students stand in the total State picture.

"Among the statistics released by the State Department of Public Instruction is the fact that 55 percent of Iowa's public secondary students watch at least 7 hours of television a week and almost one half of them devote 1 to 3 hours a week to newspaper reading. In addition, 60 percent of the students spend anywhere from 1 to 15 hours per week reading magazines.

"Students also were asked how many hours per week they listen to radio, and 23 percent responded 1 to 3 hours, 19 percent 4 to 6 hours, and 13 percent 7 to 9 hours.

"A closer look at the responses shows that 41 percent of the students watch television less than 7 hours per week while there was no response from 4 percent.

"In each of the following six viewing levels (4 to 6 hours, 7 to 9, 10 to 12, 13 to 15, 16 to 20, and more than 20), seniors spend slightly less time in front of the television set than juniors.

"Each of these figures by itself is not very meaningful, but when judged in combination with home study habits, Grade (Mark) Point Averages, and other related areas, they offer administrators data that can be used in making educational decisions.

"For instance, if a particular school's students are below the State average in newspaper and magazine reading, it may stimulate a principal to increase the stress on current events in social studies classes.

"Likewise, if one group of students watches television considerably more than other students and also has poorer scholastic marks, the administrator may see a correlation. Administrators may have different ways of handling such a situation should it arise. The important point is that they have the data available to indicate such a situation exists so that corrective action can be taken.

"The magazine, newspaper, television, and radio items in the questionnaire also indicate recreational pursuits and use of leisure time.

"Educators hope to tie many of these questions together in providing students with the best possible curriculum and study atmosphere."

Favorable Newspaper Treatment

CardPac feedback stories received favorable treatment by Iowa newspapers, assuming that any publication without negative comment can be considered favorable. The interest and initiative shown by some papers in developing a local story is encouraging. These stories of local origin, of course, will generally reflect the opinions of local administrators and should continue favorable if administrators are convinced that CardPac provides an efficient answer to school needs.

According to a report in one newspaper, the Bettendorf News, CardPac and particularly the questionnaire came under fire at a school board meeting. After lengthy discussion the board adopted a resolution that any information gathering process be submitted for board approval before being used in the classrooms. One resident at the meeting said he felt some of the questions in the CardPac Questionnaire were not valid as a means of obtaining information about schools, student populations, curricula, budgets, staff, and other school matters.

An editorial in the Bettendorf News said the "CardPac furor could easily have been avoided . . . if:

"(1) The school board had been briefed ahead of time;

"(2) Parents had been informed of what was about to happen;

"(3) Students had been properly impressed that the questionnaire was voluntary; and

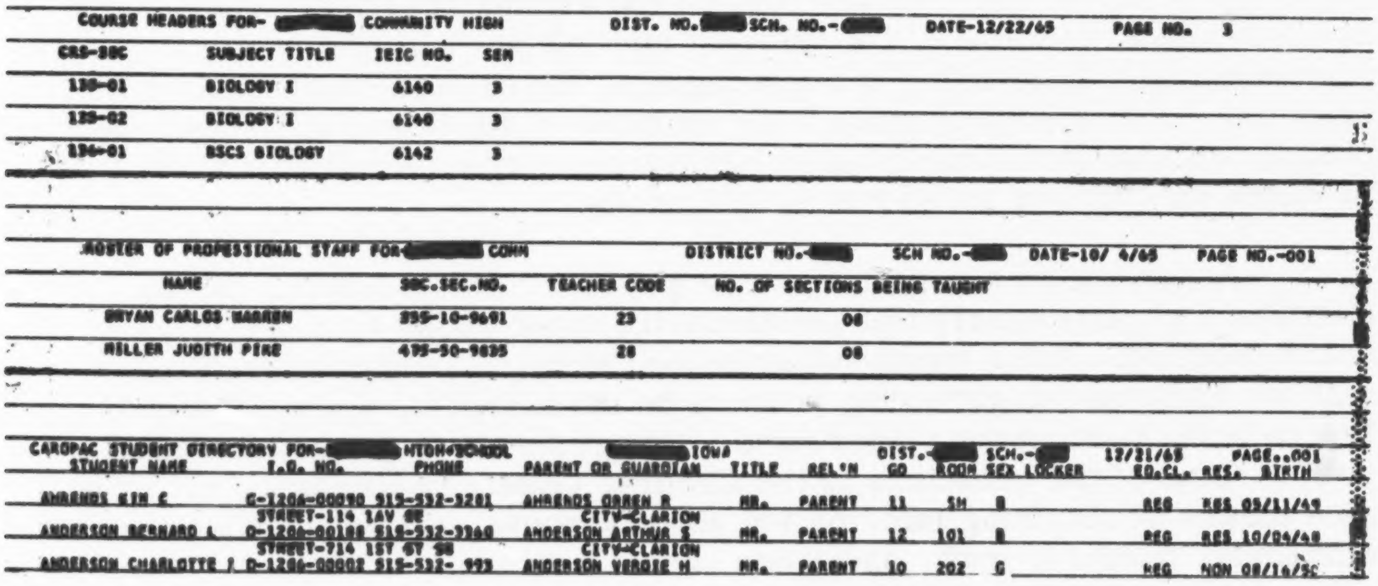
"(4) Questions had been factual enough for machines to digest. . ."

A department head from another institution in the State voiced concern that the Iowa Educational Information Center is replacing a vehicle, i.e., data collection, used by many students to meet requirements for advanced degrees. The need was expressed at the Center to communicate with officials of the State's colleges and universities offering advanced degrees and let them know what the Information Center is doing and what its future plans are.

Output

In addition to the three major feedback reports discussed earlier, participating schools are fed back 12 different lists of data as outputs of the information system: Course headers, roster of professional staff, pupil directory, room list, class list, master course list, mark report form, attendance card monitor, error suspect list for computing mark-point average, attendance list, error list of marks, attendance error list. Portions of these output forms are shown in Figures 14 and 14A.

Figure 14
CARDPAC OUTPUT FORMS



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CRS-SEC           SUBJECT TITLE      IEIC NO.   SEM
 135-01           BIOLOGY I            6140      3
 135-02           BIOLOGY I            6140      3
 136-01           BSCS BIOLOGY         6142      3

   ROSTER OF PROFESSIONAL STAFF FOR-[redacted] COMM            DISTRICT NO.-[redacted]   SCH NO.-[redacted]  DATE-10/ 4/65    PAGE NO.-001
          NAME                    SOC.SEC.NO.    TEACHER CODE     NO. OF SECTIONS BEING TAUGHT
      BRYAN CARLOS WARREN         395-10-9691         23                  08
      MILLER JUDITH PIKE          475-50-9835         28                  08

CARDPAC STUDENT DIRECTORY FOR-[redacted] HIGH SCHOOL        [redacted]IOWA              DIST.-[redacted] SCH.-[redacted]   12/21/65       PAGE..001
   STUDENT NAME           I.D. NO.       PHONE      PARENT OR GUARDIAN    TITLE   REL'N   GD  ROOM SEX LOCKER      ED.CL. RES.  BIRTH
  AHRENDS KIM C        G-1206-00090 515-532-3281  AHRENDS ORREN R          MR.   PARENT   11   SH   B                REG  RES 05/11/49
                          STREET-114 1AV SE              CITY-CLARION
  ANDERSON BERNARD L   D-1206-00188 515-532-3360  ANDERSON ARTHUR S        MR.   PARENT   12  101   B                REG  RES 10/04/48
                          STREET-714 1ST ST SW           CITY-CLARION
  ANDERSON CHARLOTTE ? D-1206-00002 515-532- 993  ANDERSON VERDIE M        MR.   PARENT   10  202   G                REG  NON 08/16/50
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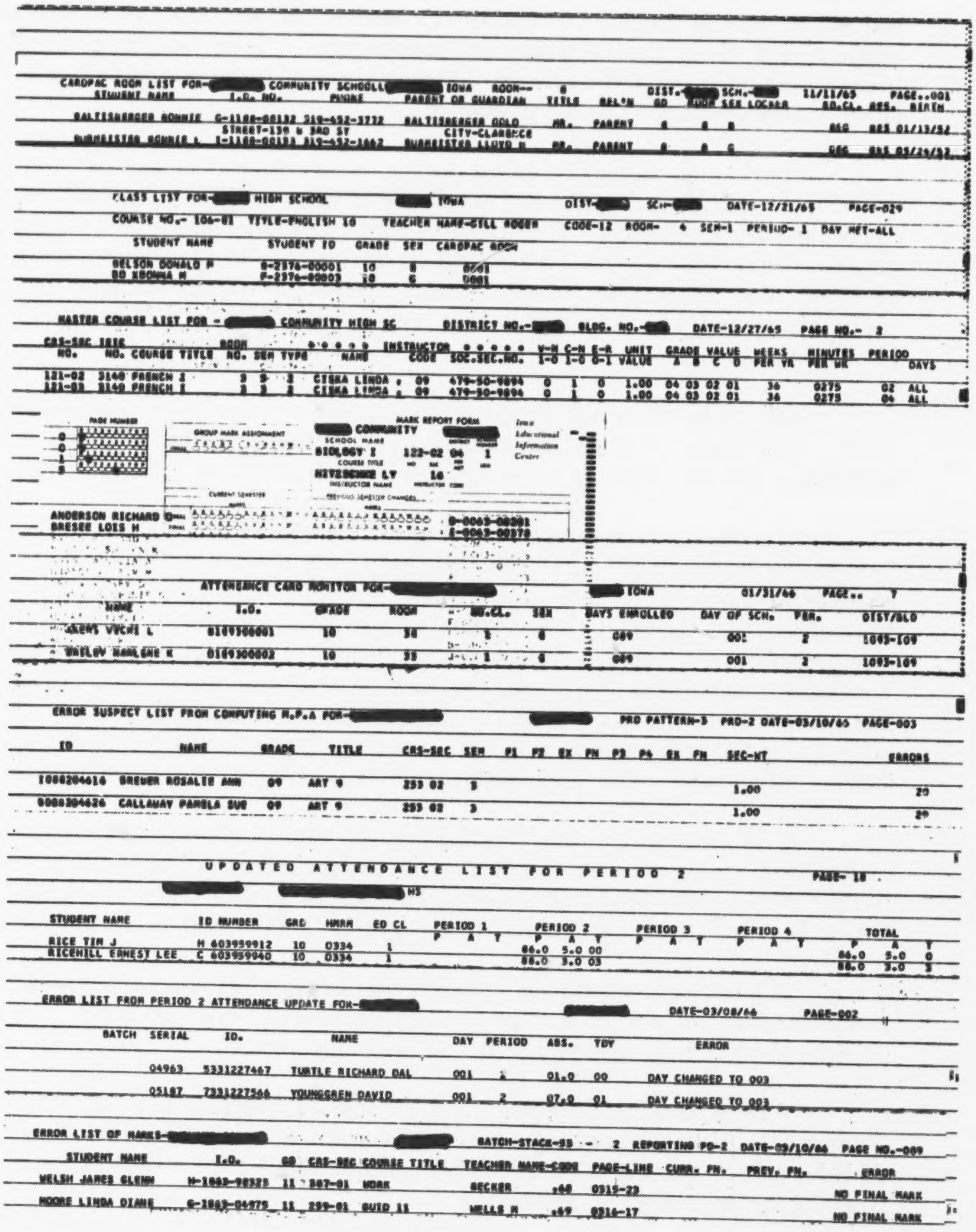
Figure 14A
CARDPAC OUTPUT FORMS (Continued)



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BALTISBERGER RONNIE  G-1188-00132 319-452-3772  BALTISBERGER ODLO      MR.   PARENT    8    8   B                REG   RES 01/13/52
                       STREET-130 W 3RD ST               CITY-CLARENCE
BURMEISTER RONNIE L  I-1188-00133 319-452-1662  BURMEISTER LLOYD M     MR.   PARENT    8    8   G                REG   RES 05/24/52
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COURSE NO.- 106-01  TITLE-ENGLISH 10    TEACHER NAME-GILL ROGER   CODE-12  ROOM-   4  SEM-1  PERIOD- 1  DAY MET-ALL
   STUDENT NAME          STUDENT ID    GRADE  SEX  CARDPAC ROOM
BELSON DONALD P         B-2376-00001    10     B       0001
BO XDONNA M             F-2376-00003    10     G       0001
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MASTER COURSE LIST FOR - [redacted] COMMUNITY HIGH SC      DISTRICT NO.-[redacted]  BLDG. NO.-[redacted]   DATE-12/27/65   PAGE NO.-  2
CRS-SEC IEIE              ROOM          * * * * *  INSTRUCTOR  * * * * *  V-N C-N E-R  UNIT  GRADE VALUE  WEEKS  MINUTES  PERIOD
  NO.   NO. COURSE TITLE  NO. SEM TYPE      NAME       CODE  SOC.SEC.NO.  1-0 1-0 0-1 VALUE  A  B  C  D  PER YR  PER WK       DAYS
121-02  3140 FRENCH I      3   3   2   CISNA LINDA ,  09   479-50-9894   0   1   0  1.00  04 03 02 01   36     0275     02  ALL
121-03  3140 FRENCH I      3   3   2   CISNA LINDA ,  09   479-50-9894   0   1   0  1.00  04 03 02 01   36     0275     04  ALL
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PAGE NUMBER                                       MARK REPORT FORM          Iowa
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 0                                           SCHOOL NAME                    Information
 1                                         BIOLOGY I      122-02 04   1     Centre
 5                                           COURSE TITLE
                                           HITZSCHKE LV     16
                                           INSTRUCTOR NAME  INSTRUCTOR CODE
                    CURRENT SEMESTER        PREVIOUS SEMESTER CHANGES
ANDERSON RICHARD D                                                   0-0063-00201
BRESEE LOIS H                                                        E-0063-00378
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BAILEY MARLENE K     0149300002       10        33          1      G        089             001        2     1093-109
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  ID              NAME          GRADE    TITLE      CRS-SEC  SEM   P1  P2  EX  FN  P3  P4  EX  FN   SEC-WT               ERRORS
1088204616  BREWER ROSALIE ANN   09     ART 9       253 02    3                                      1.00                   20
0088204626  CALLAWAY PAMELA SUE  09     ART 9       253 02    3                                      1.00                   29
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         U P D A T E D   A T T E N D A N C E   L I S T   F O R   P E R I O D   2                  PAGE- 18 .
      [redacted]  [redacted]HS

STUDENT NAME           ID NUMBER    GRD   HMRM   ED CL   PERIOD 1     PERIOD 2       PERIOD 3     PERIOD 4          TOTAL
                                                          P   A   T    P   A   T      P   A   T    P   A   T      P     A    T
RICE TIM J            H 603959912   10    0334     1                 86.0 5.0 00                                86.0  5.0   0
RICEHILL ERNEST LEE   C 603959940   10    0334     1                 88.0 3.0 03                                88.0  3.0   3
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ERROR LIST FROM PERIOD 2 ATTENDANCE UPDATE FOR-[redacted]                  [redacted]     DATE-03/08/66      PAGE-002
          BATCH  SERIAL      ID.              NAME              DAY  PERIOD   ABS.   TDY           ERROR
                 04963   5331227467   TURTLE RICHARD DAL        001    2      01.0   00     DAY CHANGED TO 003
                 05187   7331227566   YOUNGGREN DAVID           001    2      07.0   01     DAY CHANGED TO 003
```

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ERROR LIST OF MARKS-[redacted]               [redacted]   BATCH-STACK-53  -  2  REPORTING PD-2  DATE-03/10/66  PAGE NO.-009
     STUDENT NAME          I.D.       GD  CRS-SEC COURSE TITLE   TEACHER NAME-CODE  PAGE-LINE  CURR. FN.  PREV. FN.      ERROR
WELSH JAMES GLENN     H-1863-98325   11  307-01  WORK            BECKER       ,68    0315-23                          NO FINAL MARK
MOORE LINDA DIANE     G-1863-04975   11  259-01  GUID 11         WELLS M      ,69    0316-17                          NO FINAL MARK
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Radio Phone Forum Criticism

An apparently organized move to discredit the CardPac information system on a phone forum on a Des Moines, Iowa, radio station--WHO--was documented by tape recording the forum June 10-15, 1965. Many of the same people called in repeatedly before the station discouraged the subject and the move died down temporarily. "Invasion of privacy" was mentioned often by the callers. The station's announcers felt the repetitive calls amounted to a "phone-in."

More anti-CardPac calls on the phone forum began in late August and continued periodically during September. Most of the callers had erroneous information. One caller, for example, said all elementary pupils--kindergarten on up--would be given the questionnaire in the fall of 1965. (No plans were made to administer the questionnaire at the elementary level.) Another caller referred to "vulgar questions" in the questionnaire.

Six calls were directly or indirectly related to CardPac September 24, 1965. The announcers were continually probing for facts from those attacking CardPac, but the callers were unable to substantiate their claims.

The first caller mentioned CardPac and the September 24, Page 1 Des Moines Register article, "School Tests on Sex Will Be Curbed." The announcer commented that maybe the station "should get the man from Iowa City down here." The caller responded that "the man at Iowa City has to speak for his job. At least I would--it sounds like a soft one." The announcer asked the caller if she was sure those questions (in the Register) would be given to Iowa school children, and she replied, "No." But she added that the questions had been given at West Des Moines the previous week. When asked for verification, she admitted it was only hearsay.

The announcer commented that he would not want to answer questions of the type mentioned in the Register news article. The article, under the byline of Dom Bonafede of the Des Moines Register-New York Herald Tribune News Service, was datelined Washington, D.C., and is as follows:

"Questions about sex, which one congressman said could provide material for 'an entire script for Peyton Place,' will no longer be asked of school children unless Mom and Dad approve.

"This assurance was given Thursday (September 23, 1965) by Francis A. J. Ianni, acting associate commissioner of the U.S. Office of Education, during a House Government Operations subcommittee hearing on invasion of privacy.

"Representative Cornelius Gallagher (Dem., N.J.), chairman, said hundreds of thousands of U. S. students have been subjected to government-sponsored research tests requiring them 'to answer questions about their families, sex experience, religious views, their own personal values, and other matters normally regarded solely as the private business of the individual.'

"Federally financed school psychological tests, he said, include such true-or-false questions as 'My sex life is satisfactory,' 'Once in a while I think of things too bad to talk about,' 'I have never indulged in any unusual sex practices,' 'I am a special agent of God,' 'Sexual things disgust me,' and 'I am very strongly attracted by members of my own sex.'

"Gallagher said students also have been asked if they are troubled by such problems as 'fear of having a child,' 'petting and necking,' 'deciding whether I'm really in love,' and 'finding it hard to control sex urges.'

"The congressman said the majority of those given such tests were elementary and high school students. In one case, he said, 5-year-old boys in kindergarten were given tests 'to determine their masculinity.'

"He said the subcommittee was not attempting to hinder scientific advancement and further conceded that the tests might produce significant knowledge. But without security safeguards, the answers could provide 'gossip for the faculty lounge,' he commented.

"Gallagher also cited examples of 'intensive questions' relating to family life, giving these examples:

" 'How large a savings account do you have?' 'How often do your parents quarrel or argue with each other?' 'How close do you and your father feel toward each other?' 'Do you respect your mother's opinion about the important things in life?' 'How happy do you think your parents' marriage is?'

"Ianni told the subcommittee that 'preventive and remedial measures' are being studied to eliminate questions 'which needlessly infringe on individual privacy.'

"He said responses to the questions are used for statistical purposes and are not identified with any particular individual."

A second caller said she was "happy to see the questions in the Register." She said this would alert people to look for these things in Iowa. The announcer asked if she would be interested in hearing from the man in Iowa City, and she said, "Yes."

A third caller said people with objections to many of these questions probably have something to hide.

A fourth caller said she could understand why people would not want to answer the types of questions in the Register article. She said 5-year-olds have quite an imagination.

A fifth caller, a clinical psychologist, said it was a general ethical practice of researchers to obtain consent of the participants. The announcer responded that there had been some question whether the pupils last spring were asked if they wished to answer the CardPac Questionnaire. The psychologist explained that researchers are not usually interested in the individual but in generalizations. He said he recognized some of the questions in the Register article as questions he had used in clinical studies to spot disturbed children.

A sixth caller said her husband was majoring in psychology and that he saw no good in the tests--they just take time away from studies. She added that younger children could not be expected to answer them intelligently.

Moderators of the Phone Forum invited Dr. Ralph A. Van Dusseldorp, Associate Director of the Information Center who holds the dual title of Associate Superintendent for Systems in the State Department of Public Instruction, to appear on the program October 4. Dr. Van Dusseldorp accepted the invitation, beginning his appearance with a description of the CardPac System, its goals, and benefits to education. The questionnaire dominated the conversation of the callers, and Dr. Van Dusseldorp read selected items from the questionnaire and said there were absolutely no so-called sex questions. This explanation of the questionnaire did not satisfy some of the callers who apparently had made up their minds that it contained sex questions. Dr. Van Dusseldorp invited listeners and callers to send for copies of the questionnaire, and the Information Center received many requests, sending the questionnaire by mail.

Dr. Van Dusseldorp's appearance on the Forum quieted some of the more vociferous opponents of CardPac, although the attack was renewed November 5, 1965. The attack followed a call from a woman who said she had sent for, and received, a copy of the questionnaire and found nothing objectionable in it. She critized "uninformed" callers who had objected to the questionnaire. The program announcer also said he had seen the questionnaire and had found nothing objectionable, but he was not sure about the 10 questions local schools were given the option of asking.

A second woman caller said to look at the "other side" of the issue, citing the November 8, 1965, copy of U. S. News and World Report and an article in the magazine entitled "A Federal Hand on Local School?" The caller mentioned a list of questions in the article but admitted she did not know whether they had been given to any students in Iowa. The announcer said he was sure there would be no questions of this type in the CardPac program.

The U. S. News and World Report article listed two types of tests it said had been given to school pupils under the auspices of the U. S. Office of Education and which had brought widespread protests from parents and from members of Congress.

One was an opportunities survey--a series of tests given in autumn, 1965, to 1st, 3rd, 6th, 9th, and 12th graders, plus teachers, in about 5, 300 schools--nearly 1 of every 20. The tests were designed to carry out a survey, required by the Civil Rights Act, to show where children of minority groups are denied equal opportunities. Some schools refused to give the tests, after seeing questions on family and racial matters.

According to the magazine article, a questionnaire for pupils in the 12th grade included:

"Who is now acting as your father?

"Who is now acting as your mother?

"Where does most of the money come from that pays for your food, house, and clothing?

"About how often last year did your mother or father attend parent-association meetings such as the P-TA?

"Think now of your close friends. How many of them are white?

"If you could have anyone you wanted for your close friends, how many would be white?

"If you could be in the school you wanted, how many of the students would you want to be white?

"If you could be in the school you wanted, how many of the teachers would you want to be white?

"How do you and your friends rate socially in this school?"

Questions for teachers included these:

"When you attended (college), how many of the students were white?

"Did you say hello to students you didn't know?

"Have you ever attended any summer institutes or comparable training programs that offer special training in teaching or counseling the culturally disadvantaged?

"What will be your total annual salary from this school system this year? (Estimate supplements for extra services by using supplements from last year.)

"What kind of school do you prefer to work in, as far as ethnic composition is concerned?

"Which of the following policies on neighborhood elementary schools represents the best educational practice, in your estimate? (A) Neighborhood elementary schools should be maintained regardless of any racial imbalance produced. (B) Neighborhood elementary schools should be maintained, but where possible a device, such as reducing the grade span of schools, 'pairing' schools, or another practice, should be used to promote racial balance. (C) The idea of neighborhood elementary schools can be abandoned without significant loss."

According to the magazine, personality tests given by researchers financed by grants from the U. S. Office of Education cover a wide range. Some aim to outline psychological traits of children in certain types of schools. Some try to reflect the degree and effects of racial integration, or segregation, in a school district or neighborhood. Often the questions are of a highly personal nature, dealing with sex, religion, race, family relationships, income, and possessions. From a sample of the tests reported as a result of a special inquiry conducted by a subcommittee of the House Committee on Government Operations--

Ten questions from personality tests given to millions of high school students:

"True or False?--

"My sex life is satisfactory.

"Evil spirits possess me at times.

"I am very strongly attracted by members of my own sex.

"I believe in a life hereafter.

"I have been disappointed in love.

"I dream frequently about things that are best kept to myself.

"I am a special agent of God.

"When a man is with a woman, he is usually thinking about things related to her sex.

"I read the Bible several times a week.

"There is something wrong with my sex organs."

Ten questions from another test, where students were asked to fill in a blank space "with the first word that comes to mind," and were instructed to use only one word:

"My childhood was ___________

"My father ___________ me.

"My ___________ sometimes gets me into trouble.

"Secretly, I often dream of ___________.

"God is ___________.

"Men often ___________ women.

"My father's chief fault is his ___________.

"My mother's chief fault is her ___________.

"___________ makes me furious.

"___________ is disgusting."

Returning to the November 5, 1965, Phone Forum, a third caller, a man, mentioned an article in the October 26, 1965, issue of the Des Moines Tribune which concerned Federal funds for guidance counseling and testing. He said that because of the funds, "apparently we have to give these tests."

A fourth caller, a young woman, said she had never heard of CardPac and hoped to learn more about it.

A fifth caller said he wanted a guarantee that questions like those in the magazine article will not be asked in Iowa.

A sixth caller said her child was asked a question about salary which made the child cry.

A seventh caller said she was "not too worried" about CardPac anymore now that she has obtained more information on it.

On November 9th, a woman caller said CardPac has nothing to do with the knowledge of a child and mentioned the U. S. News and World Report article. The announcer replied that he was disturbed because so many callers say these "nasty sex questions" have been given in Iowa but have no proof of it. The woman retorted that she wanted a guarantee these questions would not be asked in Iowa and said the information sought was part of a plot to take over the U. S. The announcer responded that it is ridiculous to call CardPac part of a "plot."

On November 12th a teacher called into the Phone Forum and told listeners that he had administered CardPac and would not have done so if the questions had been objectionable.

CardPac again dominated the Forum program on November 17th. Eight callers, some of their voices familiar as previous callers, mentioned the subject despite the announcer's efforts not to turn this into "another CardPac day." The announcer told them to hold their CardPac calls until Dr. Van Dusseldorp appears on another program on the same station, "Ask the Expert," Tuesday, November 23.

Caller No. 1: "Is it that so-called CardPac our governor is opposed to?" The announcer later said that Governor Harold E. Hughes had instructed his daughter not to answer any questions she thought were too personal. (A newspaper article of the governor's comments made no direct reference to CardPac)."

Caller No. 2: She wanted information on the questionnaire, and the announcer gave her some erroneous information, saying the questionnaire was given to all schools (not just public schools) and commenting that Des Moines North "was sitting on the questionnaire." (The latter comment was a reference to a Des Moines Register article of October 25, 1965, which said the Des Moines schools were boycotting a statewide system of collecting student information on computer cards.)

Caller No. 3: She commented that the students do not have to sign their names to the questionnaires.

Caller No. 4: She said her daughter had taken a test in which she was asked where her mother works. The woman wondered why these questionnaires could not be sent home for the parents to see and suggested printing all the questions in newspapers.

Caller No. 5: She said she had sent for a copy of the questionnaire and had received it. She quoted several questions verbatim--one on what college the students expect to attend and another on how the parents feel about homework given the students. She was not concerned about these questions but said the State Department might have to drop CardPac if the local schools put embarrassing questions in the questionnaire.

Caller No. 6: "Why do you want to get off the subject of CardPac and why are you for it?" she asked the announcer. She said the students have to give their names and this is all part of a plot to control us for an eventual takeover of the country. She said this was a waste of time--taking two whole days--and the students could be using this time for other things.

Caller No. 7 (correcting the announcer): "All schools don't have to take it--no parochial schools have to take it."

Caller No. 8: "Are our public school authorities within their rights in using public funds to give tests?"

On November 18th a Phone Forum caller said she read an article in the newspaper which pointed out that the collection of school data through CardPac would aid the improvement of the educational progress. (She was obviously referring to one of the feedback news releases.)

Dr. Van Dusseldorp's appearance on the afternoon "Ask the Expert" program, another WHO phone forum, November 23, 1965, brought a heavy response of calls. Some were favorable but others again attacked the system, and the questionnaire in particular. One caller wondered if Federal aid was tied to meeting CardPac requirements but Dr. Van Dusseldorp said he was not prepared to answer that question. Dr. Van Dusseldorp repeated his earlier observations about the questionnaire.

The day after Dr. Van Dusseldorp was on the air, a woman caller on the morning Phone Forum program said she had heard Dr. Van Dusseldorp say the CardPac information was being put on microfilm. (He made no reference to this.) She said it is a very expensive process and wonders if the taxpayers are footing the bill for these microfilmed records which could be used for enemy records.

CardPac also was mentioned on another phone forum in Cedar Rapids, Iowa--WMT's "Air Your Opinion," an evening program. A caller December 7th said the story on "all these questionnaires" is in The Branded Child by Edward J. Van Allen, Reportorial Press. The man admitted he had never read the book but said he had read a review of it. A second caller said the subject had come up on WHO's Phone Forum and the announcers there had requested listeners to send in objectionable questions but had never received any. A third caller said he had taken "those tests" two years ago and had found some questions objectionable and had refused to answer them. The announcer asked if any action had been taken against him for refusing to answer; the caller said he did not believe so.

Anticipating further questions regarding CardPac, the publications department of the Iowa Educational Information Center sent a packet of CardPac materials to moderators of the "Air Your Opinion" program. After receiving the materials, the moderators explained on the program November 13th that "CardPac is given automatically and is not a personality test. It asks the age, sex, grade, etc., of the students. It's the same thing we used to do on index cards only they do it on computer cards today." One caller said she had children in the Cedar Rapids schools but had never heard of any objectionable questions.

Another caller, who had phoned in earlier about "those secret questionnaires," asked this question: "Would you rather spit on the Bible or the American flag?" Announcer Jim Lloyd asked him if he referred to the CardPac Questionnaire, and the caller said he was talking about "those questionnaires they've been giving in the colleges and public schools around here." Lloyd said he and Jim Wickes (the other announcer on the program) had read the CardPac Questionnaire and found nothing objectionable. The caller insisted he had talked to students who had been asked the above question.

Dr. Ira Semler, a practicing psychiatrist and the Director of Research for the Cedar Rapids Public Schools, was a guest on the "Air Your Opinion" program December 16th. He said the CardPac Questionnaire is not a test but is given in addition to the Information Center's routine way of gathering school information. He emphasized that the questionnaire is not a personality test.

V. PROJECT ALTERATIONS

Changes and additions to the CardPac information system were made prior to and during the 1965-66 administration after a thorough evaluation of the initial procedures, including a survey of all principals and superintendents. Many teachers and guidance counselors were contacted during individual school visitations, and their comments appropriately considered. State Parent-Teacher Association officials also were "sounded out" concerning any comments or criticisms they might have had.

Changes included:

1. Printing the word "front" on all cards to facilitate packing and deter errors discussed earlier regarding packing problems.

2. The identification number field was expanded to 10 characters. A mistake was made in the initial design when the field consisted of only nine characters and pupils were forced to shift cards in gridding their ID numbers.

3. The name of the CardPac Student Questionnaire was changed to CardPac Pupil Inventory, the number of questions reduced from 71 to 37, some questions were changed, and the administration time shortened from the 45-60 minutes range to the 20-30 minutes range.

4. The Student Data Summary feedback was discontinued because of disuse and an unfavorable response from school people. This was the only feedback linked directly to a pupil. The State P-TA president said one of the major complaints involving CardPac she had heard was that "when a child bares his soul, it's all over school." She was told that the Information Center had no control over the Student Data Summaries once they had been delivered to the schools.

5. The 10-question "local option" section of the pupil questionnaire was discontinued for two reasons: (1) Primarily because of costs, and (2) because of a lack of control over items added by local schools. The cost factor included the fact that a special computer program had to be written for processing the local questions which meant additional computer time and extra printed material.

Schools adding local items were asked to submit these questions to the Information Center prior to administration of the questionnaire. However, some schools did not do so, and, of course, it was physically impossible for IEIC to check all schools individually.

Examples of some local items:

School A: Do you worry about unhappiness at home? Do you worry about what will happen to the world? Do you worry if you will be popular? Do you worry if you will be a success? Do you worry about being misunderstood? Do you worry about making a mistake? Do you worry about a bad habit you have? Do you worry about the track you are in at school? Do you worry about certain religious problems? Do you worry about what is right or wrong to do at certain times? The choices of responses for these items were never, some, and much.

School B: Do you receive a fixed amount of money each week or given period as an allowance? If so, how much per week? A1 No. A2 Yes, about 50¢. A3 Yes, about $1.00. A4 Yes, about $1.50. A5 Yes, about $2.00. B1 Yes, about $2.50. B2 Yes, about $3.00. B3 Yes, about $4.00. B4 Yes, about $5.00. B5 Yes, over $5.00. To what degree have you examined your personal values and developed a living philosophy? A1 I have examined them thoroughly and have decided on a definite set of values. A2 I occasionally think about it, but have not made any definite decision. A3 I have never thought about a personal philosophy. A4 I do not plan to pursue any certain philosophy. Have you examined the traits of "generally accepted" successful men and women in history and those within your present environment to judge their important habits and characteristics? A1 I have classified those characteristics and have accepted the traits which I feel are important to me. A2 I have examined some of these traits. A3 I have never taken a look at other people's traits or characteristics. A4 I have my own characteristics. I do not worry about others. Which of the following statements best describes your attitude toward the questions and information you have been asked to give today? A1 I know this information is needed and will be used to help me and others in my school work. A2 I know this information is needed, but I am not sure if it will be of any help to me. A3 I know it is a necessary task that must be performed. A4 I am not sure that it is necessary.

School C: Which of the following best describes your eating habits at breakfast time? A1 I usually get a complete breakfast each morning. (Example: Eggs, toast, juice, and milk or something similar). A2 I sometimes eat a complete breakfast. A3 I usually eat a light breakfast (Example: Juice and toast). A4 I usually do not eat breakfast. What do you usually do for your noon meal? A1 Eat the school hot lunch. A2 Carry my lunch. A3 Do not eat. If you do not eat the school hot lunch, please indicate the reason from the following: A1 I cannot afford to eat the school hot lunch. A2 I do not care for the meals offered by the hot lunch program. A3 I prefer a sack lunch for my noon meal. Which of the following best describes your responsibilities around home? A1 I have daily chores or duties expected of me. A2 I occasionally have chores or duties expected of me. A3 I am not required to perform any chores or duties around home. Which of the following best describes your parents' attitude concerning your evenings out? A1 I am permitted to go out as often as I wish. A2 My parents limit the number of nights I can go out each week. What are your parents' attitude concerning hours when you go out in the evening? A1 No restriction on the time I have to be home. A2 They require me to be home by a certain time. Have you ever considered dropping out of high school? A1 Yes. A2 No. If you answered yes to No. 108 (the preceding question), which of the following would best describe your reason? A1 Because of difficulty with one or more teachers. A2 Because of problems at home. A3 Because I had difficulty getting along with some of the other students. A4 Because the courses were uninteresting and/or too difficult. A5 Because I needed a job. Which of the following best describes your feelings about the guidance counselor? A1 If I have a problem to discuss, he is the likely one I would go to. A2 I might discuss some things with the counselor. A3 I would not go to the counselor with a problem of any type. If you answered No. 109 (the preceding question) with A3, what reason would you probably use? A1 I am afraid of the counselor. A2 I would not want other students see me going to the counselor. A3 I do not like the counselor. A4 The counselor cannot help me in any way.

School D: Do you live within the city limits? A1 Yes. A2 No.

School E: Which one of the following best describes your parents' status with the public library? A1 My mother has a library card. A2 My father has a library card. A3 Both parents have library cards. A4 Neither parent has a library card. Do you have a public library card? A1 Yes. A2 No. I have a feeling I need help in developing better study habits. A1 Yes. A2 No.

School F: Should the graduation requirements in the social studies area (four years required at present): A1 Be left as they are. A2 Be reduced to three years. A3 Be reduced to two years. A4 Be changed in the order of study to have American History come before World History. A5 The fourth year be made elective if you can prove your proficiency by passing a comprehensive test in the area. Should the graduation requirements in the English area (four years required at present): A1 Be left as is. A2 Be reduced to three years. A3 The fourth year be made elective if you can prove your proficiency by passing a comprehensive test in the area.

School G: Which method of discipline is most likely to make you want to behave properly in a teacher's class? A1 Scolding by the teacher in front of the class. A2 A few quiet words alone with the teacher. A3 Being made to look foolish in some way (standing up, sitting on the floor, etc.). A4 A paddling or shaking by a teacher or principal. A5 Writing special words, sentences, or reports.

School H: How many minutes do you spend on the school bus riding to school each morning? (There were 15 choices of time for a response). Seniors only were asked to answer the following questions. Are you an adopted child? A1 Yes. A2 No. Does your family receive an ADC check each month? A1 Yes. A2 No. Concerning smoking, which statement best fits your position? A1 I have never smoked. A2 I have tried smoking a few times to see what it is like. A3 I smoke less than one pack a week. A4 I smoke one or two packs a week. A5 I smoke three or more packs a week. We have read much about sex education lately in the United States. In our own local area which best describes the source from where you receive the most information along this line? A1 I have not received any instruction from anyone. A2 I have received information mainly from my parents. A3 I have received information mainly from brothers or sisters. A4 I have received information mainly from others my age to whom I am not related. A5 I have received information mainly from the church. B1 I have received information mainly from the school. B2 I have received information mainly from books I have ordered on my own. B3 None of the above answers best fits my response.

School I: If you drive a car to school, where do you usually park? A1 On South 4th. A2 On Jefferson Street (north of high school). A3 On Madison Street (south of high school). A4 On south 3rd. A5 Some other place than the above. B1 I do not drive a car to school. Do you feel the noon driving policy is: A1 Too strict, should be without sign-out requirements. A2 Too permissive, poorly enforced, needs more supervision. A3 Needs improvement and revision. A4 Seems satisfactory and fair to all concerned. A5 I have no feelings concerning the matter.

School J: I would be interested in a vacation class in: A1 Driver education. A2 Typing. A3 Bookkeeping. A4 Shop. A5 Mechanics. B1 Art. B2 Remedial reading. B3 I am not interested in a summer course of any kind.

School K: Would you prefer 6-week or 9-week reporting periods and report cards? A1 6 weeks. A2 9 weeks. Do you feel minus or plus are of real importance in reporting grades on report cards and permanent records? A1 Yes. A2 No. Do you feel that

Parent-Teacher Conferences, as they exist in our school, are of benefit to you as a student? A1 Never. A2 Almost never. A3 Usually. A4 Always. What do you think of "grouping classes" based on student abilities? A1 I am in favor of grouping in all classes. A2 I am in favor of grouping in some classes. A3 I am opposed to grouping in all classes. Do you believe there is a need for a Student Council in our junior high? A1 Yes. A2 No.

School L: What other courses would you like to have this school offer? A1 Art. A2 Electricity. A3 Family Life Education. A4 German. A5 Latin. B1 Metal Working. B2 Photography. B3 Russian. B4 Shorthand. B5 Spanish. C1 Woodworking. C2 None of these. C3 Other (specify on this sheet). C4 Interior Decorating. Which is your church? (11 denominations were listed as responses along with other (specify), don't have one, and don't care to answer. Each year some students drop vocal and band. If and only if you have dropped vocal or band during the past year, which of the following reasons most nearly fit the reason for quitting? A1 The practice periods are too time consuming. A2 I no longer had the ability to play the music, as it became too difficult. A3 Music no longer interested me, as I knew all there was to know. A4 My parents encouraged me to drop the course as it was too expensive. A5 I could not meet the requirements of the course. B1 I did not want to exert the effort to continue participation. B2 I felt a personality clash with the instructor and would have continued had it not been for this personality conflict. B3 My parents urged me to quit because they felt it conflicted with my other interests. B4 The instructor advised me to quit or told me to quit because I did not have adequate talent. B5 The instructor told me to quit for disciplinary reasons.

School M: What college do you plan to attend? A1 Iowa State, Ames. A2 Northwestern College. A3 SUI, Iowa City. A4 SCI, Cedar Falls. A5 Westmar College. B1 Private college, Iowa. B2 State school, another State. B3 Church school, another State. B4 Private college, another State. B5 Not attending college. Why are you going to college? A1 Parents insist. A2 My friends are going. A3 Prepare for future. A4 To find spouse. A5 For fun. B1 I want to. B2 Nothing else to do. B3 To earn more money. B4 Increase knowledge. B5 Social standing. C1 Other reason. C2 Not attending college. Why are you not going to college? A1 Poor grades. A2 Lack finances. A3 Dislike school. A4 Parents' attitude. A5 Getting married. B1 Have a job. B2 Need money now. B3 Too difficult. B4 Other reason. B5 Plan to attend college.

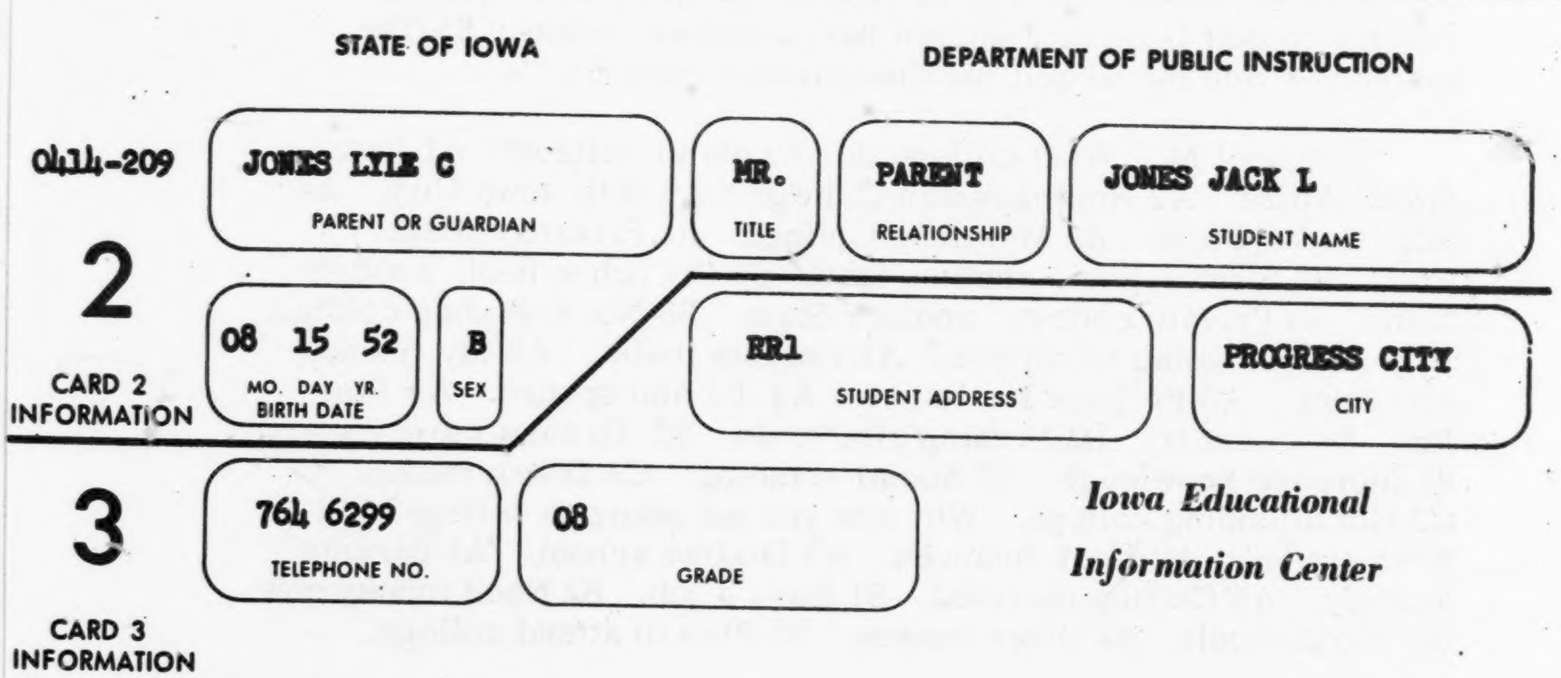
Other local questions dealt with the elementary and junior high schools attended, age of the parents, effectiveness of audio-visual presentations, vocational school interest, parents' birth places, use of study halls, policies covering discipline in the classroom, effectiveness of guidance counseling.

6. Responsibility for initial editing of all incoming CardPac materials shifted from Measurement Research Center to Information Center personnel, the goal here being correction of more errors before materials are processed. The schools, of course, have the primary responsibility of sending in accurate materials which will necessitate only a minimum number of corrections.

7. Less material was delivered to the schools for the fall administration. Deleted were the #4 Questionnaire Answer Card, (the questionnaire was not administered in the fall), the questionnaires, and the Student Tabloids. Administration of the questionnaire was scheduled again for spring.

8. As a logical extension of the initial administration of CardPac, "old" pupil information was only verified and updated. The preprinted data were fed back to the pupil on the Student Information Printout shown in Figure 15. Any corrections or additions were made by the pupil on data cards #2 (Student Information) and #3 (Student Address) referred to earlier in Figures 4 and 5.

Figure 15
STUDENT INFORMATION PRINTOUT



STATE OF IOWA

DEPARTMENT OF PUBLIC INSTRUCTION

0414-209

2

CARD 2 INFORMATION

PARENT OR GUARDIAN: JONES LYLE C

TITLE: MR.

RELATIONSHIP: PARENT

STUDENT NAME: JONES JACK L

BIRTH DATE: MO. 08 DAY 15 YR. 52

SEX: B

STUDENT ADDRESS: RR1

CITY: PROGRESS CITY

3

CARD 3 INFORMATION

TELEPHONE NO.: 764 6299

GRADE: 08

Iowa Educational Information Center

File Maintenance System

9. Another logical extension of the initial CardPac administration was the development of a file maintenance system to give schools an up-to-date, accurate file of pupil, course, and teacher information. Careful maintenance of the file would enable the CardPac Processing Service to (a) provide average daily attendance figures for the secondary schools; (b) provide feedback to the schools in the form of class lists, summary reports of attendance, and academic mark labels; and (c) provide data on the number of original entries, re-entries, transfers, completions, and dropouts to State and Federal agencies.

New cards developed to sustain file maintenance procedures were the #8 Student Enrollment-Withdrawal Card (Figure 16), #9 Master Section Header Card (Figure 17), #10 Student Course Change Card (Figure 18), #11 CardPac Room Header Card (Figure 19), and #14 Summary Attendance Document (Figure 21).

File Maintenance Procedures

About October 1 schools receive the Teacher and Course Header Cards to be returned to the processing service with the Student Course Cards (#5). Since these cards enable the computers to relate teachers to assignments and students, the day they are distributed to teachers is referred to as Staff Assignment Day. File maintenance is basically the same before and after Staff Assignment Day with minor variations.

A. Materials Used in File Maintenance

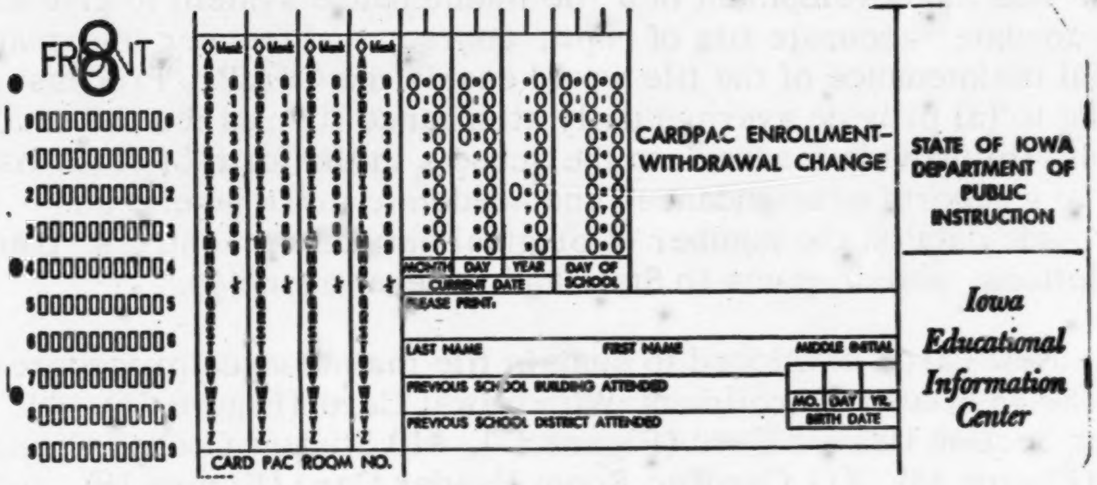
The following materials are used in file maintenance:

1. Student Information Card (#2).
2. Student Address Card (#3).
3. Student Enrollment-Withdrawal Card (#8).
4. Student Course Change Card (#10).
5. Master Section Deck.

B. Before Staff Assignment Day

1. Enrollments. New students enrolling between Student CardPac Day and Staff Assignment Day must complete pink and blue Student Stencil Cards (#1), Student Information, Address and Enrollment-Withdrawal Cards (#2, #3 and #8), and a Student Course

Figure 16
ENROLLMENT-WITHDRAWAL CHANGE CARD
(Front)


FRONT
CARDPAC ENROLLMENT-WITHDRAWAL CHANGE
STATE OF IOWA DEPARTMENT OF PUBLIC INSTRUCTION
Iowa Educational Information Center
MONTH
DAY
YEAR
DAY OF SCHOOL
CURRENT DATE
PLEASE PRINT:
LAST NAME
FIRST NAME
MIDDLE INITIAL
PREVIOUS SCHOOL BUILDING ATTENDED
PREVIOUS SCHOOL DISTRICT ATTENDED
MO.
DAY
YR.
BIRTH DATE
CARD PAC ROOM NO.

(Back)

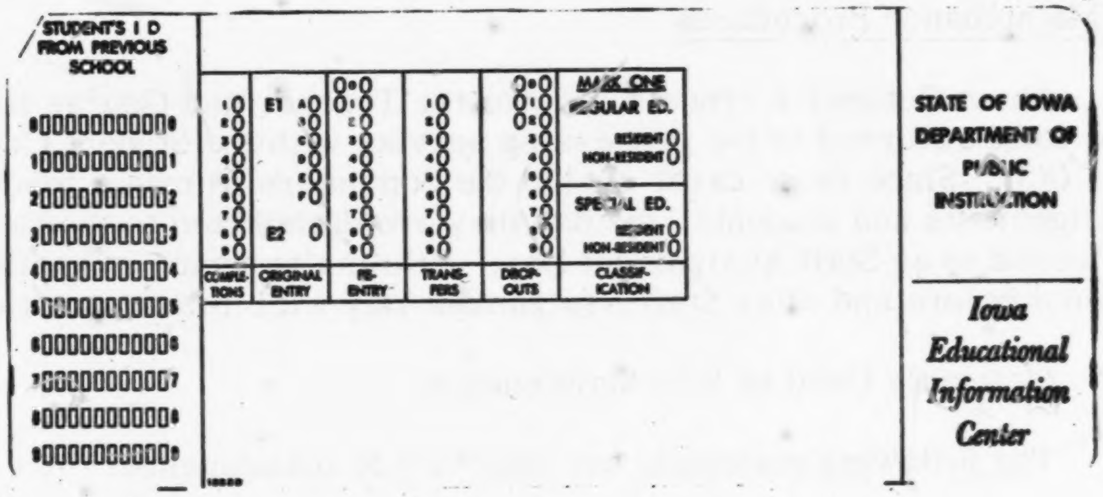

STUDENT'S I D FROM PREVIOUS SCHOOL
E1
E2
MARK ONE
REGULAR ED.
RESIDENT
NON-RESIDENT
SPECIAL ED.
RESIDENT
NON-RESIDENT
COMPLETIONS
ORIGINAL ENTRY
RE-ENTRY
TRANSFERS
DROP-OUTS
CLASSIFICATION
STATE OF IOWA DEPARTMENT OF PUBLIC INSTRUCTION
Iowa Educational Information Center

Figure 17
MASTER SECTION HEADER CARD

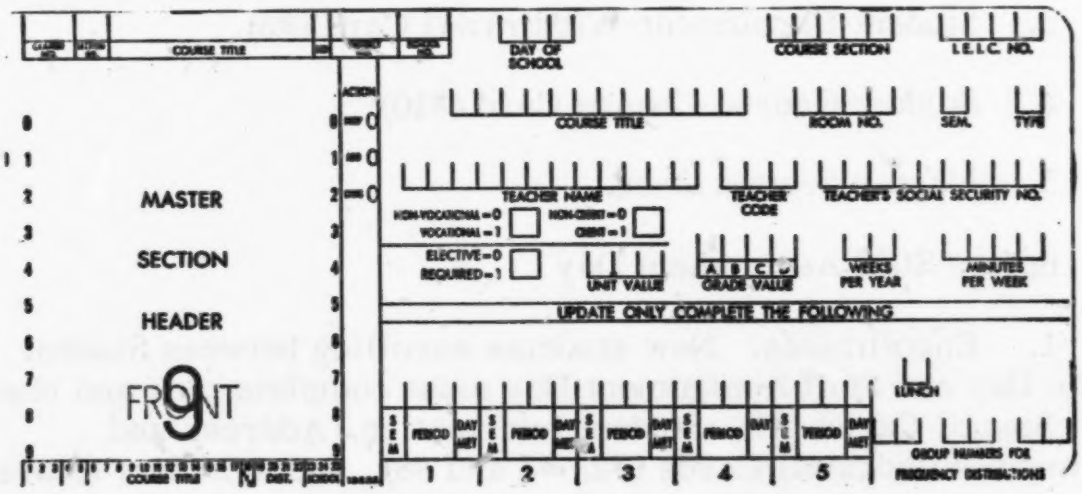
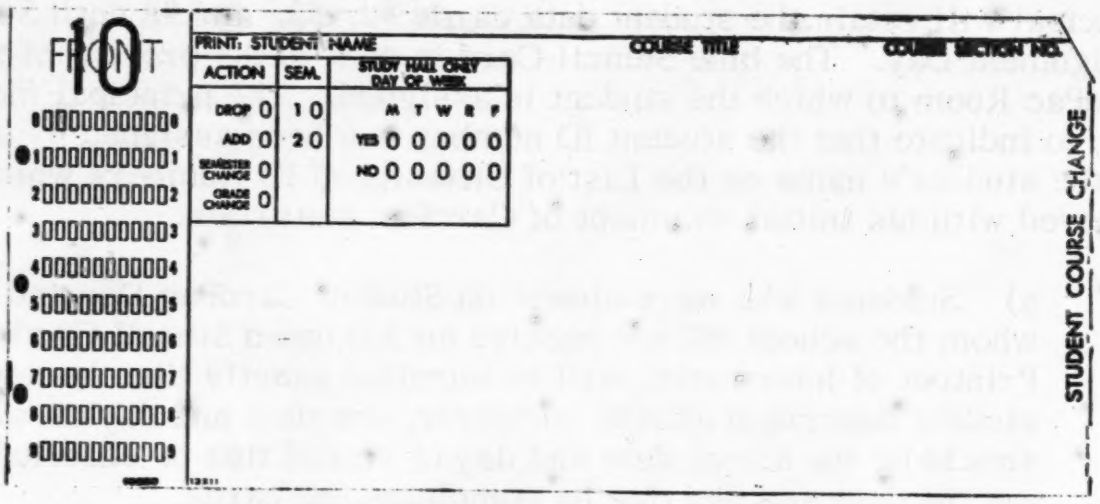

COURSE TITLE
DAY OF SCHOOL
COURSE SECTION
I.E.I.C. NO.
ACTION
COURSE TITLE
ROOM NO.
SEM.
TYPE
MASTER
SECTION
HEADER
TEACHER NAME
TEACHER CODE
TEACHER'S SOCIAL SECURITY NO.
NON-VOCATIONAL = 0
VOCATIONAL = 1
NON-CREDIT = 0
CREDIT = 1
ELECTIVE = 0
REQUIRED = 1
UNIT VALUE
A B C D
GRADE VALUE
WEEKS PER YEAR
MINUTES PER WEEK
UPDATE ONLY COMPLETE THE FOLLOWING
LUNCH
FRONT
SEM
PERIOD
DAY MET
1
2
3
4
5
GROUP NUMBERS FOR FREQUENCY DISTRIBUTIONS
COURSE TITLE
DIST.
SCHOOL

Figure 18
STUDENT COURSE CHANGE CARD
(Front)


FRONT
10
PRINT: STUDENT NAME
COURSE TITLE
COURSE SECTION NO.
ACTION
SEM.
STUDY HALL ONLY DAY OF WEEK
DROP
ADD
SEMESTER CHANGE
GRADE CHANGE
M T W R F
YES
NO
STUDENT COURSE CHANGE

(Back)

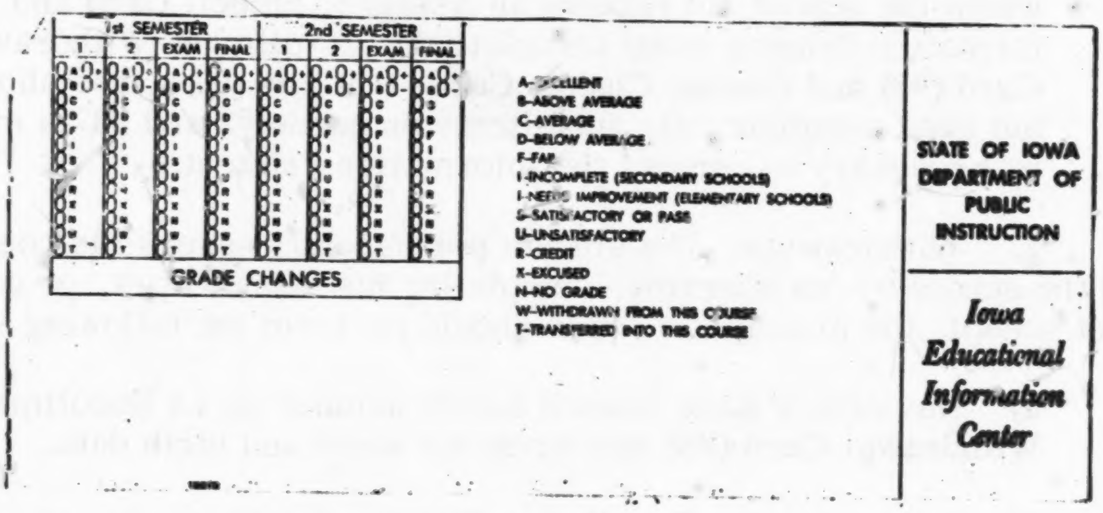
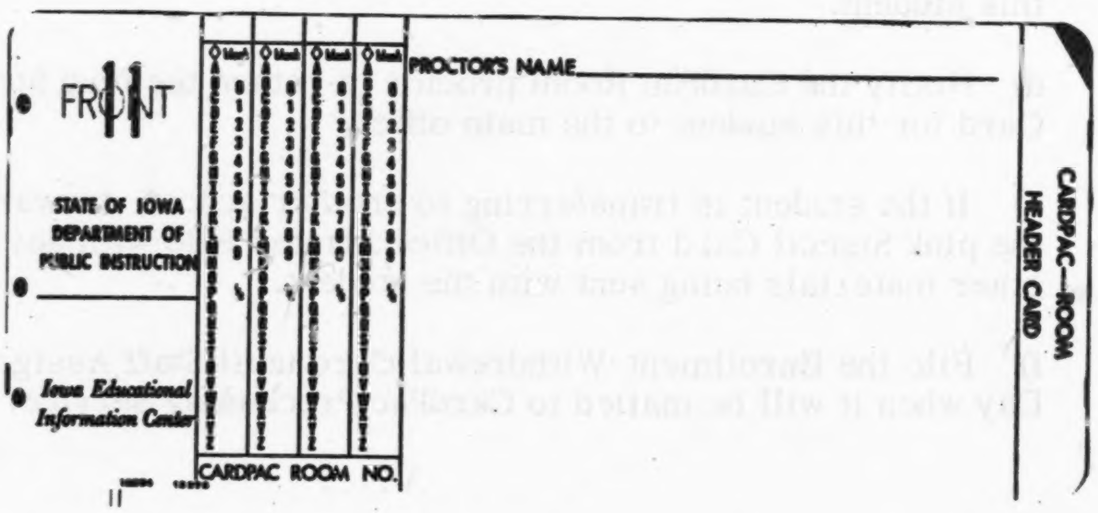

1st SEMESTER
2nd SEMESTER
1
2
EXAM
FINAL
GRADE CHANGES
A-EXCELLENT
B-ABOVE AVERAGE
C-AVERAGE
D-BELOW AVERAGE
F-FAIL
I-INCOMPLETE (SECONDARY SCHOOLS)
I-NEEDS IMPROVEMENT (ELEMENTARY SCHOOLS)
S-SATISFACTORY OR PASS
U-UNSATISFACTORY
R-CREDIT
X-EXCUSED
N-NO GRADE
W-WITHDRAWN FROM THIS COURSE
T-TRANSFERRED INTO THIS COURSE
STATE OF IOWA DEPARTMENT OF PUBLIC INSTRUCTION
Iowa Educational Information Center

Figure 19
CARDPAC ROOM HEADER CARD


FRONT
11
PROCTOR'S NAME
STATE OF IOWA DEPARTMENT OF PUBLIC INSTRUCTION
Iowa Educational Information Center
CARDPAC ROOM NO.
CARDPAC ROOM HEADER CARD

Change Card (#10) for each course they are taking. Upon entering each class for the first time the new student must present the appropriate Course Change Card to the teacher of that class. If the new student registers for any off-campus courses, he must put Course Cards for those courses in the designated boxes in the principal's office. The principal will retain the student data cards #2, #3, and #8 until Staff Assignment Day. The blue Stencil Card is sent to the proctor of the CardPac Room to which the student is assigned. The principal may wish to indicate that the student ID number has been assigned by entering the student's name on the List of Unassigned ID Numbers which he received with his initial shipment of CardPac materials.

a) Students who were absent on Student CardPac Day and for whom the school did not receive an Assigned Stencil Card and Printout of Information will be enrolled exactly like the new student described above. However, the date and day of school should be the actual date and day of school that he enrolled, and not the date and day that he completes the cards.

b) Students who were absent on Student CardPac Day but for whom the school did receive an Assigned Stencil Card and Information Printout must complete the Enrollment-Withdrawal Card (#8) and Course Change Cards (#10) as described above, but need complete only such items on cards #2 and #3 as may be necessary to correct the Information Printout.

2. Withdrawals. If a student permanently severs his connection with the school by transferring, completing his school work, or dropping out of school, the principal's office should perform the following steps:

a) Have the student stencil his ID number on an Enrollment-Withdrawal Card (#8) and write his name and birth date.

b) Indicate on the Enrollment-Withdrawal Card: day of school effective and withdrawal code.

c) Notify classroom teachers to discard Course Cards (#5) for this student.

d) Notify the CardPac Room proctor to return the blue Stencil Card for this student to the main office.

e) If the student is transferring to another school, forward the pink Stencil Card from the Office Master File with any other materials being sent with the student.

f) File the Enrollment-Withdrawal Card until Staff Assignment Day when it will be mailed to CardPac Processing Service.

3. Course Changes. Students with permission to change courses can do so by presenting a stenciled Course Change Card (#10) to the teacher of the course being added, and requesting that the Course Card (#5) for the course being dropped be discarded by the teacher of that course. If the student had completed enough of the course to be given a final grade the student's ID number should be stenciled (using the pink stencil card from the Office Master File) on a Course Change Card (#10), the "Drop" action code gridded, and the final mark gridded on the back of the card. The student would print his name on the Course Change Card, the card portion would be filed until Staff Assignment Day and the flimsy portion sent to the teacher of the course being dropped.

4. CardPac Room Number Change. This change is recorded on Enrollment-Withdrawal Card (#8). The student's ID number is stenciled on the card (using the pink Stencil Card from the Office Master File) and the current date, day of school and student's name and birth date are recorded. The new CardPac Room Number is dotted in, and transfer and re-entry codes must be marked. Grid "T-1" shows the pupil's transfer to another room in the same school; grid "R-1" indicates that the pupil received another room assignment in the same school.

5. Classification Change. A classification change is indicated by gridding the correct classification and transfer and re-entry codes on Enrollment-Withdrawal Card (#8); "T-6" and "R-8" will effect this change. Name, ID number, birth date, current date and day of school are also recorded.

6. Student's Demographic Information Changes. Changes in demographic information are indicated by stenciling the student's ID number and indicating the correct information on Information and/or Address Card (#2/#3).

Any of the changes listed require the file maintenance clerk to pull the student's Stencil Card from the Office Master File in order to stencil the ID number. The clerk may pull the card immediately and have the student stencil his ID number, or may prefer to hold all cards until the end of the day and stencil the ID numbers herself. All the cards should then be filed for return to the processing service on Staff Assignment Day. Under certain circumstances a student may have more than one Enrollment-Withdrawal Card (#8) in the file at any one time; one such instance could occur when a late enrollment is followed by a classification change at a later date. Withdrawal of the student would result in a third #8 card on file--all of which should be forwarded to the processing service.

C. After Staff Assignment Day

All enrollments, withdrawals, and changes in student courses or indicative information after Staff Assignment Day follow the same procedures as before Staff Assignment Day except that the Course Change Cards (#10) recording new course enrollments are retained in the principal's office. The classroom teacher receives only the flimsy copy notifying her of the new student being added to her class.

The school will also receive a Master Section Deck as an aid to the principal's office in file maintenance. By the end of the seventh week of school the principal should receive the following materials:

1. Master Section List. This lists every section that is offered in the school with such indicative information as course and section number, course title, teacher name, units of credit, etc.

2. Class Lists. Lists of students in each section of each course offered in the school. The printouts will be by name, within section, within teacher code sequence.

3. Master Section Deck. A deck of Master Section Header Cards (#9) corresponding to the listings on the Master Section List, one card for each section of each course offered in the school. The cards come by section-within-course number sequence with course and section number and course title, period and day met prepunched and preprinted.

4. Course Dividers. Tab card for each course to be used in indexing the Master Section Deck. The Course Divider Card is preprinted with course number and title.

5. Student Data Card Dividers. A set of three tab card dividers for indexing student data cards #2, #3 and #8 at the rear of the Master Section Deck.

6. Card File Tray. A metal tray for filing the Master Section Deck and all change and correction cards completed after Staff Assignment Day.

When these materials are received the Master Section Deck is placed in the Card File Tray and the Course Divider Cards inserted in front of their respective Section Header Cards. Any Course Change Cards (#10) that have been completed since Staff Assignment Day should now be filed behind the respective Master Section Header Cards (#9). The Course Change Card should be filed behind the section header card itself and not behind the tabbed course divider card which is only for convenience in locating the Section Header Cards. The processing service recommends that Course Change Cards for any section be filed alphabetically behind the respective Section Header Card.

The Student Data Card Dividers should be placed at the rear of the Master Section Deck for filing cards #2, #3 and #8.

The principal should distribute the Class Lists received with the Master Section Deck to the classroom teachers. Each teacher should check the class list for each section he teaches. If any student is enrolled whose name does not appear on the Class List the teacher must add his name to the bottom of the list. The teacher need not scratch names of students who may have dropped since the list was prepared.

Teachers should return the Class Lists to the principal's office in two groups--one group the lists containing errors, and the other the lists without errors. The file maintenance clerk must then make corrections, filing Course Change Cards in the Master Section Deck as indicated by these corrected Class Lists.

This file will be maintained in the principal's office until four weeks before the end of the semester and must include any of the following changes:

1. Student course changes
2. Changes in student indicative information
3. Classification or room number changes
4. New enrollments
5. Withdrawals
6. Curriculum Changes
7. Teachers added or dropped

D. Changes Effected by Master Section Header Card

The Master Section Header Card will be used to report the following changes:

1. A change in teacher for any section
2. A section dropped or added
3. Changes in indicative information such as course title, number, etc.

The Master Section Deck includes a Master Section Header Card (#9) for each section listed on the Master Section List. The Master Section Header Card is preprinted and prepunched with course and section number and course title. Blank spaces are provided for teacher name and number, room number, and other indicative information; and an "Action" column enables the principal to indicate "drop," "change," or "add" action.

The Master Section Header Card is used for changing any information pertaining to a course or section of a course, or in the principal's description of the course or section.

Certain information that is common to all sections of a course can be changed merely by changing the information on the card for

Section 01 of the course. For example, if an error occurred in which six sections of a course were described as meeting 10 weeks of the year instead of 18 the principal could make the correction by gridding the "Change" action and writing in 18 in the "weeks per year" space of the first section card only. The computer would extend this action to the other five sections. Course information that is common to all sections of a course and can be changed throughout all sections by marking the change on the first section card only are:

1. IEIC number
2. Vocational or non-vocational
3. Course Title
4. Type
5. Elective or required
6. Unit value
7. Grade value
8. Weeks per year
9. Number of minutes per week

All other data appearing on Master Section Header Cards are considered unique to the individual section. Thus, if a teacher resigns and is replaced, the new teacher's name, code and social security number must be entered on the Master Section Header Card of each section involved. The change action is indicated by marking that code in the action column.

If a section is dropped the principal needs mark only the action code "drop." An additional section can be added by completing all indicative information about the section on a blank Master Section Header Card.

In adding a section the principal must also list course and section number. Each course on the Master Section List has been numbered sequentially beginning with "101" and each section within a course has also been numbered sequentially beginning with "01." If the new section to be added is an additional section of a course already defined on the Master Section List, the principal can use that same course number and the next sequential section number not already used.

If the new section is a section of a new course the principal should use the next sequential course number on his Master Section List and begin section numbering with "01." He should also identify this course with a 4-digit Information Center number from the list in the Appendix. The principal should enter the information about this new section on his Master Section List to keep it current.

The principal must also indicate the meeting time of the new section. He should record this at the bottom of the Master Section Header Card in the first set of "Sem-Period-Day Met" fields. This is the only instance in which non-UPDATE principals (those not in Scheduling or Attendance and Mark Reporting) will use this space on the Master Section Header Card.

The semester in which the section meets should be entered under "Sem" according to the following code:

1 = first semester only
2 = second semester only
3 = all year course

The first period of the day that the section meets should be entered under "Period."

The "Day Met" schedule of the section must be converted to a single-character code according to the table below. For reference purposes the letter abbreviations for the days are as follows:

M = Monday
T = Tuesday
W = Wednesday
R = Thursday
F = Friday
All = All days of the week (except Sat. & Sun.)

For example: If a course meets only on Tuesday and Thursday, Locate TR. The code number for TR is (M); therefore (M) is written on the Master Course Listing.

CODE FOR DAYS MET

Days Met	Code	Days Met	Code
ALL	0	MTWF	F
MTWR	1	TWR	G
MTW	2	TW	H
MT	3	T	I
M	4	TF	J
MWF	5	TRF	K
MRF	6	TWF	L
MW	7	TR	M
MR	8	TWRF	N
MF	9	W	P
MTF	A	WR	Q
MTRF	B	WF	R
MWRF	C	WRF	S
MWR	D	R	T
MTR	E	RF	U
		F	V

E. Miscellaneous Notes on Course Change Card (#10)

Since the Course Change Card (#10) is used interchangeably in the CardPac System and the UPDATE subscription services, clerks in non-UPDATE schools should note the following applications:

1. Action.

a) Non-UPDATE schools will never use the action code "semester change."

b) Non-UPDATE schools will use the action code "drop" only if a final mark is to be given to the student dropping out of the course. If no final mark is to be given the teacher indicates the withdrawal by marking a "W" on the mark report form at the end of the semester.

c) The action code "grade change" is used only when the school must correct or enter some mark for a student. In most cases a teacher will make his own corrections at the end of the next semester. Mark changes are recorded on the back of the card, and non UPDATE schools can use only the two columns marked "finals, first semester," and "finals, second semester." A mark gridded into one of these columns will be entered into the student record regardless of whether the action might be dropping, adding or changing a course.

2. Non-UPDATE schools will never use the fields identified as "semester" and "study hall only day of week."

Pupil Accounting at End of Semester

Four weeks before the end of the semester, the principal or file maintenance clerk makes a final check of the Master Section Deck to see that all changes have been filed and the deck is ready to be returned to the processing service. Since the tabbed Course Divider Cards cannot be run through the card scanner, they should be removed from the deck and retained in the metal file tray in the office for filing any other changes that might occur. The principal prepares the remaining deck of the following cards for mailing:

1. School Header Card.

2. All the Master Section Header Cards (#9) with any student Course Change Cards (#10) slotted behind the related Master Section Header Card.

3. Any Student Information Cards (#2) recording fixed information for new students or corrections for other students.

4. Any Student Address Cards (#3) recording variable information for new students or corrections for other students.

5. Any Enrollment Cards (#8) compl ed since Staff Assignment Day.

No divider cards need be used.

These cards should be packed in the original card boxes and returned to:

CardPac Processing Service
321 East Market Street
Iowa City, Iowa 52240

Pack all cards right side up facing forward so the corner cuts are aligned. The blue-tip of Master Section Deck Header Cards will appear among the data cards. Pack cards tightly in the container, filling any extra space with wadded paper. Do not pack cards loosely enough to shuffle out of position in transit.

A. The Accounting Materials

Three to five days before the end of the semester the school will receive the following materials.

1. Attendance Cards. A card file of students in name-within-grade sequence or name-within-CardPac Room sequence according to the principal's preference. The cards will provide for machine-readable entries of student attendance for the semester.

2. Class lists on machine-readable report forms in name within section, within course within teacher code sequence.

3. Updated Master Section Deck. Any changes in curriculum or teaching staff will be reflected in the new Master Section Deck. Otherwise it will be an exact reproduction of the deck sent to the processing service.

4. Student Error Suspect and Change List. A printout of all changes made in student information through processing of the Master Section Deck. This provides the principal a quick summary of all the changes made, and also lists certain corrections that contained errors or suspected errors such as:

a) ID numbers incomplete or gridded incorrectly.
b) New student for whom no Enrollment Card was filed.
c) Name or parent name left blank.
d) Any inconsistencies that indicate errors.

5. Detailed instructions for the attendance clerk and classroom teachers. Complete instructions for completing the machine-readable attendance cards and grade lists.

B. Summary of Accounting Procedures

At the end of the semester the Attendance clerk grids in attendance data for students on the Attendance Cards according to the accompanying instructions; classroom teachers grid in student marks on the machine-readable forms according to the accompanying instructions.

The principal will check these materials and return them to the processing service. Within approximately three weeks he will receive:

1. Mark labels. Two-pressure-sensitive labels for each student's permanent folder containing the following information:

a) Student name and number
b) Courses and marks for the semester
c) Attendance record
d) Mark Point Average

2. Attendance List. A list of the students and the summary of their attendance. The list will be in the same sequence requested for the Attendance Cards.

Other 1965-66 Procedures

Before continuing, a summary of other 1965-66 CardPac procedures is appropriate and also will prove meaningful in light of certain material to follow.

A four-page letter and postcard were mailed to the State's public secondary principals August 9, 1965, informing them, among other things, that all principals new to the CardPac data collection system were invited to an orientation meeting in Des Moines August 23. For those unable to attend August 23, a makeup meeting was scheduled the following day. The postcard was to be returned by the principals and an appropriate section marked as to which day they wished to attend and if they did not wish to attend.

Approximately 70 participated in the first meeting, mostly new principals but also a few superintendents, guidance counselors, teachers, and elementary principals. Nineteen took part in the second meeting. The two-day turnout of 89 was considered excellent in view of an accurate appraisal of the administrative turnover. Information staff members in charge of the orientation said remarks from the participants were in praise of the presentation.

The orientation began with a welcome by an Information Center staff member and a slide presentation on the Iowa Educational Information Center and Measurement Research Center, and included a description of CardPac and computer terminology. The director of data processing for the State Department of Public Instruction followed with an address. Another short slide presentation was given describing what CardPac will do and has done. Next on the agenda was a talk by an Information Center staff member on additional services of the Center which are in addition to CardPac but thoroughly compatible. Participants were then divided into groups, each led by an Information Center staff member. The groups discussed updating and returning of Master Course Lists and Teacher Lists which principals had received prior to the meeting. After lunch the same groups discussed CardPac materials and means of inaugurating CardPac with the new administrators. Individual consultation concluded the orientation.

Fall Materials Shipped

Shipping of fall CardPac materials was completed in one week, ending August 23, whereas the initial CardPac shipping took two-and-one-half weeks. A better-organized shipping system and more accurate mailing lists are credited with reducing shipping time. The materials included more than 8,000,000 pages of printed matter. A list of the materials follows:

PUNCHED CARD FORMS	NO. OF ITEMS
Card #1 - Stencil Card (pink)	325,000
Card #1 - Stencil Card (blue)	325,000
Card #2 - Student Information	325,000
Card #3 - Student Address	325,000
Card #5 - Course Cards	2,250,000
Card #6 - Course Headers	120,000
Card #7 - Teacher Headers	150,000
Card #8 - Enrollment-Withdrawal	325,000
Card #9 - Master Section Headers	150,000
Card #10 - Course Change Cards	250,000
Card #11 - Room Header	16,000
School Header (Not numbered)	15,000
Total Card Forms	4,576,000

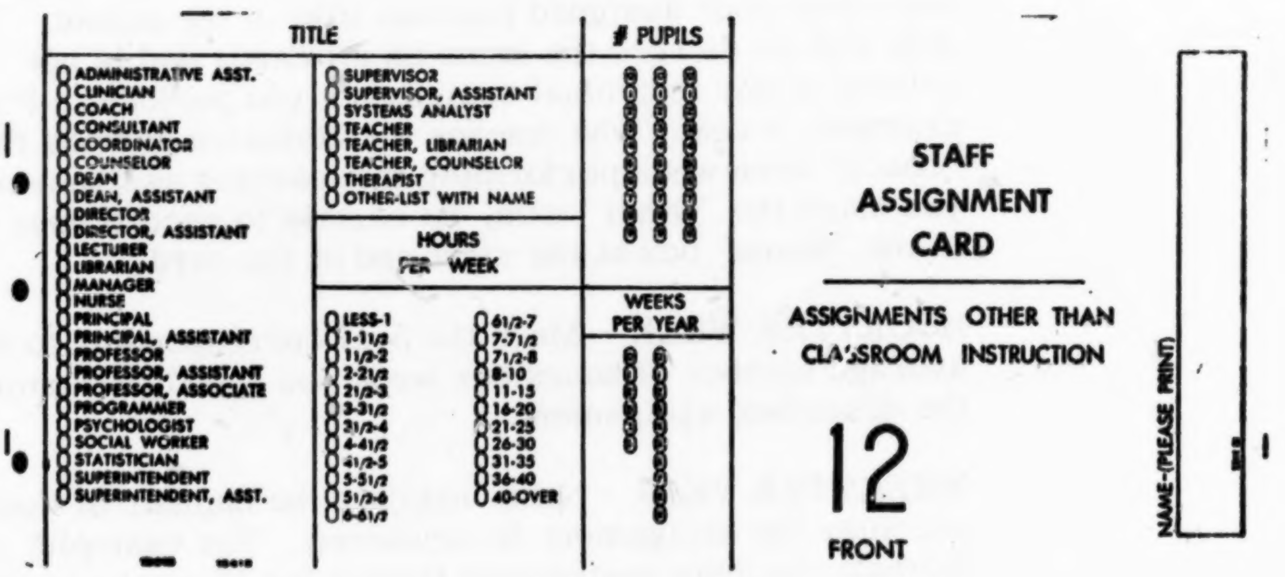
PRINTED MATERIAL	NO. OF ITEMS	
Administration Manual @ 48 pp.	30,000	
Teachers' Brochure @ 2 pp.	25,000	
Student Data Summary @ 9 pp.	230,000	
Total Printed Material Forms		285,000

OTHER SUPPLIES	NO. OF ITEMS	
CardPac Envelopes.	300,000	
Packing Boxes.	1,500	
Total Other Supplies		301,500
TOTAL ITEMS SENT TO SCHOOLS		5,163,000

Questionnaires, of course, were not included in the shipping since they were not to be administered until spring.

Two other additions to the 1965-66 administration of the information system were the #12 Staff Assignment Card (Figure 20) and the #14 Summary Attendance Document (Figure 21).

Figure 20
STAFF ASSIGNMENT CARD
(Front)



TITLE

○ ADMINISTRATIVE ASST.
○ CLINICIAN
○ COACH
○ CONSULTANT
○ COORDINATOR
○ COUNSELOR
○ DEAN
○ DEAN, ASSISTANT
○ DIRECTOR
○ DIRECTOR, ASSISTANT
○ LECTURER
○ LIBRARIAN
○ MANAGER
○ NURSE
○ PRINCIPAL
○ PRINCIPAL, ASSISTANT
○ PROFESSOR
○ PROFESSOR, ASSISTANT
○ PROFESSOR, ASSOCIATE
○ PROGRAMMER
○ PSYCHOLOGIST
○ SOCIAL WORKER
○ STATISTICIAN
○ SUPERINTENDENT
○ SUPERINTENDENT, ASST.

○ SUPERVISOR
○ SUPERVISOR, ASSISTANT
○ SYSTEMS ANALYST
○ TEACHER
○ TEACHER, LIBRARIAN
○ TEACHER, COUNSELOR
○ THERAPIST
○ OTHER-LIST WITH NAME

HOURS PER WEEK

○ LESS-1
○ 1-1½
○ 1½-2
○ 2-2½
○ 2½-3
○ 3-3½
○ 3½-4
○ 4-4½
○ 4½-5
○ 5-5½
○ 5½-6
○ 6-6½
○ 6½-7
○ 7-7½
○ 7½-8
○ 8-10
○ 11-15
○ 16-20
○ 21-25
○ 26-30
○ 31-35
○ 36-40
○ 40-OVER

PUPILS

WEEKS PER YEAR

STAFF ASSIGNMENT CARD

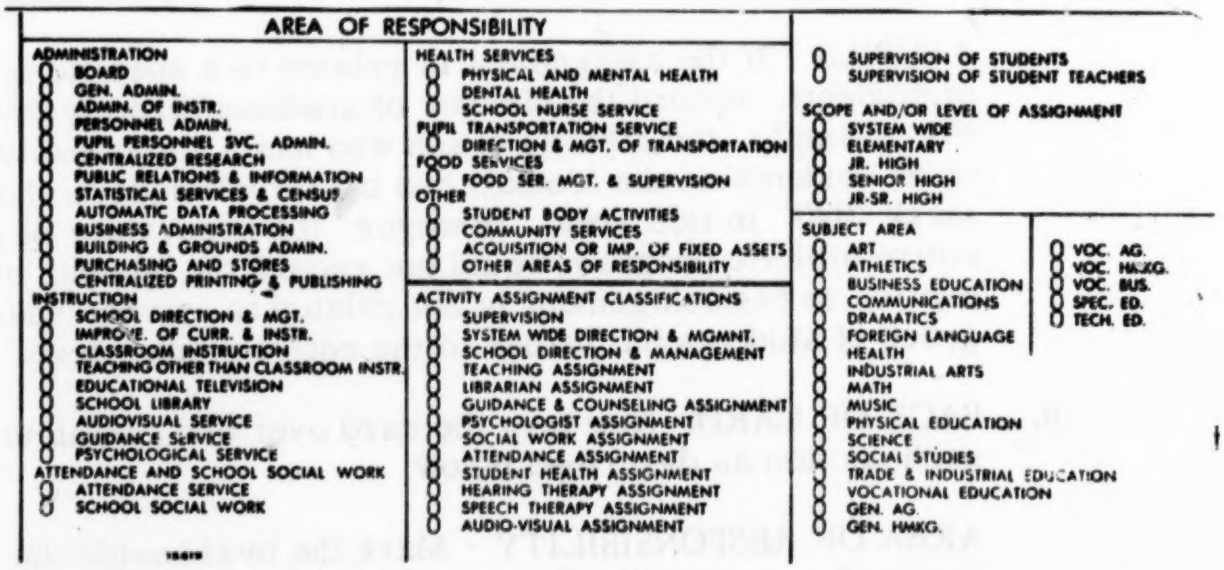
ASSIGNMENTS OTHER THAN CLASSROOM INSTRUCTION

12

FRONT

NAME-(PLEASE PRINT)

(Back)



AREA OF RESPONSIBILITY

ADMINISTRATION
○ BOARD
○ GEN. ADMIN.
○ ADMIN. OF INSTR.
○ PERSONNEL ADMIN.
○ PUPIL PERSONNEL SVC. ADMIN.
○ CENTRALIZED RESEARCH
○ PUBLIC RELATIONS & INFORMATION
○ STATISTICAL SERVICES & CENSUS
○ AUTOMATIC DATA PROCESSING
○ BUSINESS ADMINISTRATION
○ BUILDING & GROUNDS ADMIN.
○ PURCHASING AND STORES
○ CENTRALIZED PRINTING & PUBLISHING

INSTRUCTION
○ SCHOOL DIRECTION & MGT.
○ IMPROVE. OF CURR. & INSTR.
○ CLASSROOM INSTRUCTION
○ TEACHING OTHER THAN CLASSROOM INSTR.
○ EDUCATIONAL TELEVISION
○ SCHOOL LIBRARY
○ AUDIOVISUAL SERVICE
○ GUIDANCE SERVICE
○ PSYCHOLOGICAL SERVICE

ATTENDANCE AND SCHOOL SOCIAL WORK
○ ATTENDANCE SERVICE
○ SCHOOL SOCIAL WORK

HEALTH SERVICES
○ PHYSICAL AND MENTAL HEALTH
○ DENTAL HEALTH
○ SCHOOL NURSE SERVICE

PUPIL TRANSPORTATION SERVICE
○ DIRECTION & MGT. OF TRANSPORTATION

FOOD SERVICES
○ FOOD SER. MGT. & SUPERVISION

OTHER
○ STUDENT BODY ACTIVITIES
○ COMMUNITY SERVICES
○ ACQUISITION OR IMP. OF FIXED ASSETS
○ OTHER AREAS OF RESPONSIBILITY

ACTIVITY ASSIGNMENT CLASSIFICATIONS
○ SUPERVISION
○ SYSTEM WIDE DIRECTION & MGMNT.
○ SCHOOL DIRECTION & MANAGEMENT
○ TEACHING ASSIGNMENT
○ LIBRARIAN ASSIGNMENT
○ GUIDANCE & COUNSELING ASSIGNMENT
○ PSYCHOLOGIST ASSIGNMENT
○ SOCIAL WORK ASSIGNMENT
○ ATTENDANCE ASSIGNMENT
○ STUDENT HEALTH ASSIGNMENT
○ HEARING THERAPY ASSIGNMENT
○ SPEECH THERAPY ASSIGNMENT
○ AUDIO-VISUAL ASSIGNMENT

○ SUPERVISION OF STUDENTS
○ SUPERVISION OF STUDENT TEACHERS

SCOPE AND/OR LEVEL OF ASSIGNMENT
○ SYSTEM WIDE
○ ELEMENTARY
○ JR. HIGH
○ SENIOR HIGH
○ JR-SR. HIGH

SUBJECT AREA
○ ART
○ ATHLETICS
○ BUSINESS EDUCATION
○ COMMUNICATIONS
○ DRAMATICS
○ FOREIGN LANGUAGE
○ HEALTH
○ INDUSTRIAL ARTS
○ MATH
○ MUSIC
○ PHYSICAL EDUCATION
○ SCIENCE
○ SOCIAL STUDIES
○ TRADE & INDUSTRIAL EDUCATION
○ VOCATIONAL EDUCATION
○ GEN. AG.
○ GEN. HMKG.

○ VOC. AG.
○ VOC. HMKG.
○ VOC. BUS.
○ SPEC. ED.
○ TECH. ED.

Each professional staff member must submit a Staff Assignment Card for each major non-classroom assignment he performs. Instructions for completing the card are as follows:

A. FRONT OF CARD: Record the following information on the front of the card.

NAME - Please print your last name, followed by your first name and middle initial, in the space provided on the right end of the card.

TITLE - Mark the oval beside the title that most accurately describes your assigned position title in the school. This title will be marked the same on all cards and is not related to any individual assignment you perform. For example, a coach who teaches mathematics carries the title "coach" even when performing the teaching assignment. If you mark the "Other" title, be certain to record your title in the "Name" box at the right end of the card.

HOURS PER WEEK - Mark the oval corresponding to the average number of hours per week you spend performing the described assignment.

WEEKS PER YEAR - Next, indicate the number of weeks per year the assignment is conducted. For example, a football coaching assignment lasting for 12 weeks would be indicated by marking the "1" oval in the first column, and the "2" oval in the second column. Be certain to "right justify" time periods of less than 10 weeks. For example, if an assignment lasts 4 weeks, mark the "0" oval in the first column and the "4" in the second column.

# PUPILS - If the assignment is related to a specific group of students, record the number of students directly involved. For example, the athletic coach who has a combined total of 40 students on the football and basketball squads should mark "040" in this area. However, the supervisor of the entire athletic program would not record the number of pupils, as his assignment is not related to any one specific group of students but rather to the entire student body.

B. BACK OF CARD: Now turn the card over and complete each section as described below.

AREA OF RESPONSIBILITY - Mark the oval beside the "area of responsibility" which most accurately identifies the assignment. The specific areas are grouped into seven categories according to the functional service areas of the district. Definitions of the seven service areas and assignment responsibilities encompassed in each area are listed below.

ACTIVITY ASSIGNMENT CLASSIFICATION - Mark the oval beside the classification which most accurately defines the nature of the primary activities involved in the assignment being described. Definitions of the activities encompassed in the "Supervision" and "Direction and Management" assignments are listed later in the instructions.

SCOPE AND/OR LEVEL OF ASSIGNMENT - Mark the oval which most accurately defines the primary scope or level of the responsibilities of the assignment being described. The category "Systemwide" is to be marked when the activities of the assignment extend or apply to all of the schools in the district. This category applies most often to staff members at the district central office.

SUBJECT AREA - Mark this area only when the primary assignment activities relate directly to one of the specific subject areas listed. For example, a staff member describing the athletic coaching assignment should mark the oval beside "athletics" since the primary assignment activities relate directly to athletics.

When you complete the card, check it for accuracy and then complete an additional card for each major assignment other than classroom instruction.

When you have recorded all your assignments, arrange the cards face up. Next, place one of your preprinted teacher header cards (Card #7) face up on top of the assignment cards and return the completed deck to your principal. If you did not receive a preprinted teacher header card, print your name and social security number in the boxes provided at the top of a blank card.

Description Of The Service Areas

1. Administration - The service area consisting of those activities which have as their purpose the general regulation, directing, and control of school system affairs that are systemwide and not confined to a narrow phase of school activity. Assignments for the administration of any

one of the separate service areas of Attendance and School Social Work Services, Health Services, Pupil Transportation, Food Services, Student Body Activities, or Community Services are not recorded here. They are recorded under the separate service areas for these activities.

The full-time and less-than-full-time assignments of such staff members as superintendent of schools, deputy superintendent, associate superintendent, assistant superintendent, director, and business manager are classified here when the assigned activities classify as administrative services.

2. Instruction - The service area consisting of those activities which have as their purpose teaching, aiding teaching, improving the quality of teaching, or directing and managing a school in an educational program for pupils.

   The full-time and less-than-full-time assignments of such staff members as teacher, principal, supervisor of instruction, school counselor, school librarian, director of guidance, audio-visual personnel, school psychologist, speech and hearing specialist, and psychometrist are classified here when the assigned activities consist of teaching, aiding teaching, supervising instruction improving the quality of teaching, or directing and managing a school.

3. Attendance and School Social Work - The service area consisting of those activites which have as their purpose the improvement of the attendance of pupils at school and the problems of pupils which involve the home, school and community.

   The full-time and less-than-full-time assignments of such staff members as director of attendance services, attendance officer, director of school social work services, school social workers, and visiting teacher are classified here when the assigned activities classify as attendance and school social work services.

4. Health Services - The service area consisting of physical and mental health services which are not direct instruction. It consists of the activites of providing medical, dental, psychiatric, and nurse services.

   The full-time and less-than-full-time assignments of such staff members as physician, psychiatrist, dentist, nurse, dental hygienist, and health technician are classified here when the assigned activities classify as health services.

5. Pupil Transportation Services - The service area consisting of those activities which have as their purpose the conveyance of public school pupils to and from school activities, either between home and school or on trips related to school activities.

   The full-time and less-than-full-time assignments of such staff members as director of pupil transportation services, bus mechanic, bus serviceman, bus garage foreman, bus driver, bus dispatcher, and bus attendant are classified here when the assigned activities consist of public school pupil transportation services.

6. Food Services - The Service area consisting of those activities which have as their purpose the management of the food services program of the school system and the preparation and serving of regular and incidental meals, lunches, or snacks in connection with school activities.

   The full-time and less-than-full-time assignments of such staff members as director of food services, cafeteria manager, lunchroom manager, dietitian, nutritionist, cook, food server, and kitchen worker are classified here.

7. Other - The service area consisting of those activities which cannot be classified in service areas 1 - 6.

   A. Student Body Activities: Assignments to staff members which consist of such activities as advising pupil groups (e. g. , clubs), overseeing the activities of pupils, and providing counsel for activities which are managed and operated by pupils.

   B. Community Services: Assignments to staff members which consist of activities related to community recreation programs, civic activities, public libraries, programs of custodial and detention care of children, community welfare activities, and services for non-public school pupils provided by the public schools on a continuing basis.

   C. Acquisition or Improvement of Fixed Assets: Assignment to staff members consisting of those activities which have as their purpose acquisition of fixed assets, additions to fixed assets, and improvement of fixed assets.

Description Of Activity Assignment Classification

1. Supervision - An assignment to a staff member to provide leadership, guidance, and expertness in a field of specialization for the purpose of improving the performances of staff members.

   Only the full-time and less-than-full-time supervision assignments of such staff members as supervisor of instruction, curriculum consultant, supervisor of transportation staff, supervisor of maintenance staff, supervisor of food services staff, supervisor of plant operation staff, and assistant supervisor are classified here.

   (Assignments to staff members traditionally having the title of "supervisor" which consist primarily of the activities of directing and managing a program of the school system rather than overseeing or improving the performance of staff members are not classified here.)

2. Systemwide Direction And Management - An assignment to a staff member to perform the activities of directing and managing an operation of the school system (other than a school) for which purpose and program plans have been broadly established.

   Only the full-time and less-than-full-time direction and management assignments of such staff members as director of pupil transportation, director of food services, director of attendance services, director of health services, director of library services, and the assistant directors for such services are classified here.

3. School Direction And Management - An assignment to a staff member to perform the professional activities of heading a school.

   Only the full-time and less-than-full-time school direction and management assignments of such staff members as elementary or secondary school principal, administrative dean, and director of a community college or technical institute are classified here.

Staff Assignment Card Criticized

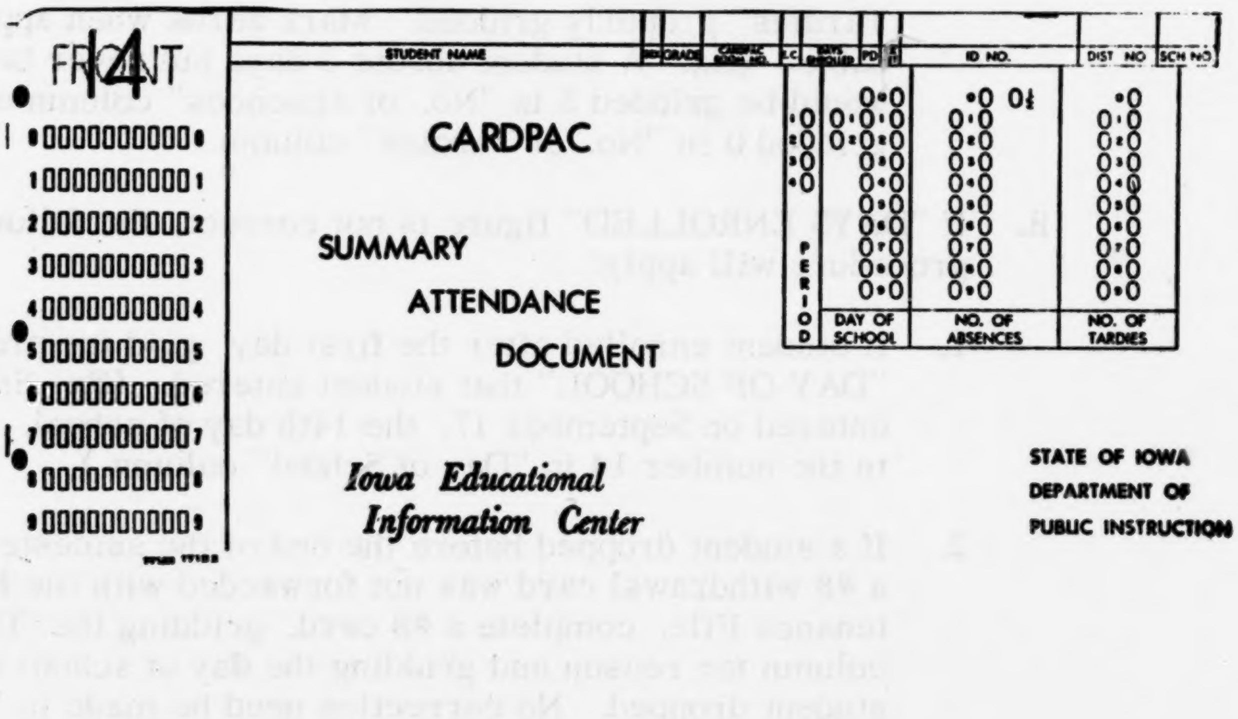
The Staff Assignment Card was criticized by school people, both as to content and instruction. A distinction was asked between "major" and "non-major" classroom assignment. A definition of non-classroom assignment was requested. Information Center personnel cited page 42 of the Staff Accounting Handbook which designates classroom instruction as "the area of responsibility for instructing pupils in courses in classroom situations..."

Summary Attendance Document

The # 14 Summary Attendance Document (Figure 21) is used to compute average daily attendance figures and supply attendance data as they relate to original entries, re-entries, transfers, completions, and dropouts.

To provide an accurate accounting for each school, it is necessary that each school provide the number of days of school for each semester. The day for County Institute as a meeting held is not counted. The total days for the year should be at least 179 but may be more than 179.

Figure 21
SUMMARY ATTENDANCE DOCUMENT


FRONT
14
STUDENT NAME
GRADE
CARDPAC ROOM NO.
L.C.
DAYS ENROLLED
PD
ID NO.
DIST NO
SCH NO
CARDPAC
SUMMARY
ATTENDANCE
DOCUMENT
PERIOD
DAY OF SCHOOL
NO. OF ABSENCES
NO. OF TARDIES
Iowa Educational
Information Center
STATE OF IOWA
DEPARTMENT OF
PUBLIC INSTRUCTION

Attendance Data Instructions

The State Department of Public Instruction plans, in the future, to calculate local Average Daily Attendance through data collected by the CardPac System. A pilot test of the CardPac ADA calculation is being made by the Processing Center at this time.

The accuracy of the CardPac ADA calculation depends primarily upon the accuracy with which the file maintenance system is kept and upon the checking and completion of the Pupil Attendance Card #14. (A calendar was provided for the school's convenience.)

You will receive a preidentified Summary Attendance Document (card #14) for each pupil in your school about whom identifying information has been collected. Familiarize yourself with these cards. You will disregard "Period" column. Cards should be completed according to the following procedure.

A. If "DAYS ENROLLED" figure is correct the following will apply.

   1. If the student was not absent or tardy: Do not return card for processing.

   2. If the student was either absent or tardy: Return the card with both "No. of Absences" and/or "No. of Tardies" properly gridded. Mark zeros when applicable. (Ex. A student absent 3 days but never tardy would be gridded 3 in "No. of Absences" column and gridded 0 in "No. of Tardies" column.

B. If "DAYS ENROLLED" figure is not correct, the following procedure will apply:

   1. If student enrolled after the first day, grid the proper "DAY OF SCHOOL" that student entered. (Ex. Student entered on September 17, the 14th day of school, grid in the number 14 in "Day of School" column.)

   2. If a student dropped before the end of the semester and a #8 withdrawal card was not forwarded with the Maintenance File, complete a #8 card, gridding the "Dropout" column for reason and gridding the day of school that student dropped. No correction need be made in "Day of School" column on the #14 card. Complete information on absences and tardies on Card #14.

3. If a student enrolled after the first day and dropped before the end of semester, grid the "day of school" entered on #14 attendance card and grid the "day of school" the student dropped on the #8 withdrawal card. Complete the "DROPOUT" column on the #8.

C. If the school does not receive a preidentified attendance card (#14), for any pupil the following procedures apply:

1. If the pupil is not listed in the school directory, cards 2, 3, and 8 must be completed for that pupil. A blank card #14 must be made out with the heading and all columns completed. These cards will be included when the second semester maintenance file is processed approximately four weeks before the end of second semester.

2. If the pupil is included in the school directory, but failed to receive a preidentified attendance card (#14), complete all information on a blank #14 card. This card should be sent with the school's deck of #14 cards.

Legend of card heading titles:

E. C. - educational classification, i. e. resident or non-resident

PD. - first semester 2; second semester 4; check letter is the alpha letter of ID number.

Questionnaire Changes

As mentioned earlier many changes were made in the CardPac Student Questionnaire.

Dropped from the spring 1965 questionnaire (Appendix A) were items 1, 2, 3, 11, 12, 17, 28, 29, 30, 31, 32, 35, 37, 38, 41, 42, 43, 44, 46, 47, 48, 49, 50, 54, 55, 56, 57, 58, 61, 62, 63, 64, 65, 69, 70, 71.

Changes were made in some of the retained items, including condensation of some responses. Others were reworded for clarification. Some of the items were deleted because of school and/or parental objections, others involved constant information, and yet others were deleted simply to reduce the size of the questionnaire and decrease administration time.

School People Complaints

So far this report has mentioned the phone forum criticism of CardPac and ignored the complaints of individual school people. However, these complaints were loud and clear in many instances. Many were justified and appropriate action taken to refine the system; others simply were from people fighting the system or administrators under pressure from local school boards and parents.

Some administrators said that if they were to administer the questionnaire again, it would be in the face of intense pressure. Much of the dissatisfaction with the CardPac information system, and specifically the questionnaire, is centered in the populous Des Moines area where 10 percent of the State's school children reside. The phone forum criticism already has been cited. Although the Des Moines school board by one vote approved participation in CardPac during the 1965-66 school year, the schools did not return their materials during the fall semester and there was no indication they intended to participate.

An October 25, 1965, a news article in the Des Moines Register entitled "Sit On Pupil Cards Here" explained that the "Des Moines Public Schools were boycotting a statewide system of collecting student information on computer cards... Packets of computer cards were sent to each Des Moines high school when school opened in August. The school principals are'just sitting on them, '" a school official said.

The news story continued: "School officials are seeking legal advice on whether filling out the cards is legally required. Some parents objected to some of the questions students were asked to answer on the cards last spring. That's why Des Moines schools are dragging their feet on the project this fall, " the school official said.

Another Des Moines area problem involved the duplication of services by the CardPac System of automated services some of the schools have within their own county (Polk). Information Center officials contacted Polk County data processing officials and plans were being made to resolve this situation.

Sociology Questionnaire

Another questionnaire problem involved the administration of a University of Iowa sociology questionnaire in 36 schools as part of the CardPac administration. The schools who administered the 10-question "Survey of High School Seniors" had agreed to participate. However, many administrators in schools not participating in the sociological study were not aware of the study and denied such questions were part of the CardPac administration since they themselves had not administered the additional questions. When they discovered the questions were given in some schools, the administrators felt they had been wronged. At a Polk County meeting in which Information Center officials were confronted with this problem, they assured the administrators that no additional questionnaires would be administered this spring and apologized for the breakdown in communications.

Ironically much of the criticism of the CardPac Questionnaire stemmed from the sociological study which, of course, was not actually a part of CardPac.

The schools participating in the sociological survey were Bettendorf High School, Bettendorf; West High School, Davenport; Jefferson High School, Council Bluffs; Lincoln High School, Council Bluffs; East High School, Des Moines; Roosevelt High School, Des Moines; Valley High School, West Des Moines; Urbandale High School, Urbandale; West High School, Waterloo.

Central High School, Sioux City; Dubuque High School, Dubuque; Jefferson High School, Cedar Rapids; Fort Dodge High School, Fort Dodge; Muscatine High School, Muscatine; Ottumwa High School, Ottumwa; Mason City High School, Mason City; Albia High School, Albia; Algona High School, Algona; Centerville High School, Centerville; Washington High School, Cherokee.

Clear Lake High School, Clear Lake; Urbana Consolidated High School, Urbana; Miles Jr-Sr. High School, Miles; Alta High School, Alta; Schaller High School, Schaller; Pocahontas High School, Pocahontas; Thompson High School, Thompson; C & M High School, Massena; Greenfield High School, Greenfield; Clarke High School, Osceola; Royal High School, Royal; Grundy Center High School, Grundy Center; Mid-Prairie High School, Wellman; West Marshall High School, State Center; Argyle High School, Argyle; and Dows High School, Dows.

Many of the school people embroiled in the questionnaire controversy said the problem would be at least partially resolved next time if the questionnaire is made available to the parents--for instance through local newspapers--prior to the administration. Since the questionnaire was not to be administered again until spring, no decision regarding this was made during the period covered in this report. School boards also said more information should be disseminated to the public and to themselves. In this regard a slide presentation has been prepared for public presentations--especially P-TA groups.

Deadline Violations

Inability of schools to meet processing deadlines created one of the most serious problems in the 1965-66 administration. After the initial mailing of materials to the schools, there is a two-way flow of materials between the CardPac Processing Center (Measurement Research Center) and the schools. Each subsequent operation is dependent on a preceding one. The first date for sending materials to schools was met by MRC, but from that point on the schedule deadline was extended due to the late return of materials from schools.

Shipment of CardPac materials was completed in one week, ending August 23. Almost three months later--November 17--approximately 70 percent of the schools had not returned their #5 Course Cards, #6 Course Header Cards, and #7 Teacher Header Cards. The #6 and #7 cards could not be sent to the schools until the latter had returned their Master Section Course and Staff Lists which were to be returned by the end of the first week of school. As of November 1, two months after the start of the fall term, 23 schools had not returned these Master Section Course and Staff Lists.

Thirty-one schools with an estimated enrollment of 39, 190 had not returned their #2 Student Information Cards, #3 Student Address Cards, and #8 Enrollment/Withdrawal Cards by November 1. These cards also were to be returned by MRC by the end of the first week of school.

Twenty-one schools(mostly from the Des Moines area) with a total enrollment of 33, 493 had returned no materials of any kind by November 1.

As these deadline violations became more chronic, a memorandum was sent to all CardPac principals February 15, 1966, informing them that the CardPac program was running considerably behind planned schedules. The memorandum continued:

"This has been caused primarily by the fact that materials have been somewhat slower in being submitted than was anticipated and that intensive editing has been required to assure that data on file are reliable.

"We have been planning revisions in CardPac for the coming year. However, since we are now behind schedule anyway, we believe it would be advantageous to make some immediate changes as outlined below.

"According to our records you have received Mark Report

Forms and attendance cards for reporting first-semester marks and attendance. Our modified CardPac procedure would involve your retaining the Mark Report Forms and attendance cards at your school until the end of the second semester. At that time you would have your teachers put second-semester marks in the "previous semester changes" field. First-semester marks should have been or should be placed in the "current semester" field. Attendance cards should be completed for the entire year. A new attendance card will be sent for that purpose. Marks for second-semester courses and for any student whose name is not on the Mark Report Form for either semester should be submitted on the reverse side of the #10 card. We suggest that you not prepare #10 cards for the second semester at this time. It is recommended, however, that you continue to keep #2, #3, and #8 cards up-to-date.

"If you have already sent your Mark Report Forms to Iowa City, we will return them to you immediately. However, some schools have been planning to receive labels at the end of the first semester and want to receive them. If you are in this situation, we will process your materials and prepare your labels for the first semester. Enclosed is a card on which you are asked to indicate whether or not you need the first-semester labels. We do plan to send labels at the end of the year for the entire year.

"In summary the modified procedures are as follows:

"1. The Mark Report Forms are used to indicate both first- and second-semester marks, first-semester marks in the current-semester field and second-semester marks on the previous semester changes field.

"2. The reverse side of the #10 card is used to indicate marks for students whose names are not on Mark Report Forms of sections of courses in which they are enrolled or who are in sections of courses for which Mark Report Forms were not produced. This latter case would include the sections of nearly all courses which were scheduled second semester only. File #10 cards back of #9 cards in the usual manner.

"3. Complete an attendance card for each student at the end of the school year. A new card will be sent for that purpose.

"4. Do not send Mark Report Forms, #10 cards in place behind appropriate #9 cards, and attendance cards to IEIC until after the end of the school year in May or June.

"5. Keep #2, #3, and #8 cards up-to-date.

"It is apparent that the CardPac procedures for this year have been burdensome. We will make every effort to provide a system which will be much less of a burden next year. We believe that the reporting of both semester marks and attendance at the end of the year is a promising possibility."

Some of the schools blamed the file maintenance system for their tardiness in returning materials, although there is a possibility these complaints resulted from poor internal procedures rather than weaknesses inherent in the CardPac System.

The Information Center believes the only way the deadline problem will be overcome is to condition the principals to meet the deadlines. The principals are prodded both as the deadline nears and afterward, first with letters and then with telephone calls. Both are time-consuming and expensive. As the administrators come to realize that reports and records they need depend on processing of materials as deadlines dictate, they should respond accordingly. However, this problem certainly cannot be underscored too heavily.

CardPac Survey

As part of an evaluation of the information system, a survey of principals' and superintendents' sentiments was conducted. Questionnaires were sent to all principals and superintendents in the public secondary schools. The questions and responses follow:

Principals' Summary Of CardPac Survey

The tally for each question shows the frequency of response as a percent of the total number of surveys returned. (Thus when the total percent does not equal 99, some principals did not respond to that question.) In each category the first percent (left) represents 296 principals with schools enrolling 50-299 pupils. The second percent (right) represents 233 principals with schools enrolling 300-600+pupils. The total response to the survey was 529.

Number of respondents by high school enrollment of district (grades 9-12).

50-74	75-99	100-149	150-199	200-299	300-399	400-499	500-599	600-above
6	12	63	89	126	14	34	47	77

CardPac

1. Considering the amount of information gathered, the Cardpac

System of Educational Accounting is a relatively simple method for collecting data on pupils, teachers and curriculum.

7/6	18/18	17/17	30/28	27/28
strongly disagree	disagree	no opinion	agree	strongly agree

2. By introducing CardPac the State Department of Public Instruction showed leadership in the field of educational data processing.

4/2	4/4	12/11	41/37	34/38
strongly disagree	disagree	no opinion	agree	strongly agree

3. The administration of the CardPac System has been smooth and has caused little disruption in the operation of our secondary schools.

8/7	28/29	24/23	20/21	19/19
strongly disagree	disagree	no opinion	agree	strongly agree

4. Once the CardPac System is fully implemented, it will prove invaluable as a source of information in school administration.

5/4	13/10	24/20	33/33	22/24
strongly disagree	disagree	no opinion	agree	strongly agree

5. Did the Questionnaire administered as a part of the spring CardPac contain any questions which were felt to be objectionable by students, yourself, and/or staff?

18 Yes 18 65 No 67

6. Did you encounter any unfavorable reactions to the administration of the CardPac Questionnaire?

19 Yes 25 68 No 75

7. In general, the State Department of Public Instruction provided accurate and timely communications on the CardPac System.

6/7	12/17	16/18	36/30	28/27
strongly disagree	disagree	no opinion	agree	strongly agree

8. In general, the CardPac information provided by the Iowa Educational Information Center in manuals, directions, and letters was adequate.

5/4	13/19	14/17	34/29	32/30
strongly disagree	disagree	no opinion	agree	strongly agree

Feedback

10. This first part of the "feedback" was useful.

11/13	25/23	31/27	22/22	10/14
strongly disagree	disagree	no opinion	agree	strongly agree

11. As the second part of the "feedback," school and statewide summaries of the responses to the spring questionnaire were provided. How did you use this information?

12. This second part of the "feedback" was useful.

12/9	16/11	25/19	28/33	17/25
strongly disagree	disagree	no opinion	agree	strongly agree

13. The "feedback" provided information about pupils and programs at the local level which was clear, easy to understand and helpful.

10/9	12/11	20/17	33/24	24/27
strongly disagree	disagree	no opinion	agree	strongly agree

Superintendents' Summary Of CardPac Survey

The tally for each question shows the frequency of response as a percent of the total number of surveys returned. (Thus when the total percent does not equal 99, some superintendents did not respond to that question.) In each category the first percent (left) represents 139 superintendents with schools enrolling 50-299 pupils. The second percent (right) represents 70 superintendents with schools enrolling 300-600+ pupils. The total response by superintendents numbered 209.

Number of respondents by total high school enrollment of district (grades 9-12).

50-74	75-99	100-149	150-199	200-299	300-399	400-499	500-599	600-above
3	11	34	43	48	18	16	10	26

CardPac

1. Considering the amount of information gathered, the CardPac System of Educational Accounting is a relatively simple method for collecting data on pupils, teachers, and curriculum.

strongly disagree	disagree	no opinion	agree	strongly agree
4/6	14/14	19/15	35/32	31/30

2. By introducing CardPac the State Department of Public Instruction showed leadership in the field of educational data processing.

strongly disagree	disagree	no opinion	agree	strongly agree
4/4	6/5	14/10	39/33	32/37

3. The administration of the CardPac System has been smooth and has caused little disruption in the operation of our secondary schools.

strongly disagree	disagree	no opinion	agree	strongly agree
5/7	28/28	24/26	22/19	20/18

4. Once the CardPac System is fully implemented, it will prove invaluable as a source of information in school administration.

strongly disagree	disagree	no opinion	agree	strongly agree
4/6	12/5	20/14	35/38	26/32

5. Did the Questionnaire administered as a part of the spring CardPac contain any questions which were felt to be objectionable by students, yourself, and/or staff?

14 Yes 15 63 No 63

6. Did you encounter any unfavorable reactions to the administration of the CardPac Questionnaire?

20 Yes 25 69 No 75

7. In general, the State Department of Public Instruction provided accurate and timely communications on the CardPac System.

4/4	12/12	17/18	35/35	30/30
strongly disagree	disagree	no opinion	agree	strongly agree

8. In general, the CardPac information provided by the Iowa Educational Information Center in manuals, directions, and letters was adequate.

4/2	9/10	13/16	39/37	34/32
strongly disagree	disagree	no opinion	agree	strongly agree

Feedback

9. As the first part of the "feedback," multiple copies of cards containing individual pupil information were provided. How did you use this information?

____

____

____

10. This first part of the "feedback" was useful.

11/6	15/18	25/25	32/31	16/20
strongly disagree	disagree	no opinion	agree	strongly agree

11. As the second part of the "feedback," school and statewide summaries of responses to the spring questionnaire were provided. How did you use this information?

____

____

____

12. This second part of the "feedback" was useful.

13/11	14/6	24/16	32/38	16/28
strongly disagree	disagree	no opinion	agree	strongly agree

13. The "feedback" provided information about pupils and programs at the local level which was clear, easy to understand and helpful.

8/9	10/6	22/16	36/38	23/29
strongly disagree	disagree	no opinion	agree	strongly agree

14. Please indicate any comments you have on the CardPac System not covered by this survey. ______________________________

____

____

____

15. Please indicate any changes in the CardPac System you would suggest:

____

____

____

____

Superintendents' And Principals' Summary Of CardPac Survey

The tally for each question shows the frequency of response as a percent of the total number of surveys returned. (Thus, when the total percent does not equal 99, some superintendents and principals did not respond to that question.) In each category the first percent (left) represents 219 superintendents. The second percent (right) represents the response of 545 principals.

Number of respondents by high school enrollment of district (grades 9-12).

50-74	75-99	100-149	150-199	200-299	300-399	400-499	500-599	600-above
S. 3	11	34	43	48	18	16	10	26
P. 6	12	63	89	126	64	31	31	107

CardPac

1. Considering the amount of information gathered, the CardPac System of Educational Accounting is a relatively simple method for collecting data on pupils, teachers and curriculum.

5/6	13/18	15/17	34/30	31/27
strongly disagree	disagree	no opinion	agree	strongly agree

2. By introducing CardPac the State Department of Public Instruction showed leadership in the field of educational data processing.

4/3	5/5	12/11	37/39	35/36
strongly disagree	disagree	no opinion	agree	strongly agree

3. The administration of the CardPac System has been smooth and has caused little disruption in the operation of our secondary schools.

6/7	28/29	24/24	21/20	20/19
strongly disagree	disagree	no opinion	agree	strongly agree

4. Once the CardPac System is fully implemented, it will prove invaluable as a source of information in school administration.

5/4	9/12	17/22	35/34	29/24
strongly disagree	disagree	no opinion	agree	strongly agree

5. Did the Questionnaire administered as a part of the spring CardPac contain any questions which were felt to be objectionable by students, yourself, and/or staff?

15 Yes 18 64 No 66

6. Did you encounter any unfavorable reactions to the administration of the CardPac Questionnaire?

22 Yes 22 71 No 71

7. In general, the State Department of Public Instruction provided accurate and timely communications on the CardPac System.

4/6	12/14	17/17	35/33	30/29
strongly disagree	disagree	no opinion	agree	strongly agree

8. In general, the CardPac information provided by the Iowa Educational Information Center in manuals, directions, and letters was adequate.

3/4	9/16	15/15	38/32	33/32
strongly disagree	disagree	no opinion	agree	strongly agree

Feedback

10. This first part of the "feedback" was useful.

9/12	15/23	25/30	33/22	16/12
strongly disagree	disagree	no opinion	agree	strongly agree

11. As the second part of the "feedback," school and statewide summaries of responses to the spring questionnaire were provided. How did you use this information?

12. This second part of the "feedback" was useful.

12/11	11/13	21/22	34/31	21/21
strongly disagree	disagree	no opinion	agree	strongly agree

13. The "feedback" provided information about pupils and programs at the local level which was clear, easy to understand and helpful.

8/9	9/12	19/18	36/34	26/26
strongly disagree	disagree	no opinion	agree	strongly agree

Responses to this survey of principals and superintendents resulted in the following project alterations:

1. The information system was simplified.
2. The questionnaire was shortened.
3. The Student Data Summary Sheet was eliminated.

VI. DISSEMINATION

In addition to day-to-day dissemination affecting school people actually involved in the information system and the news releases and magazine articles cited earlier, descriptions of the system were presented at numerous conferences and programs, many of them major addresses.

The list included an Electronic Information Handling Conference at the University of Pittsburgh, October 6-8, 1964; Iowa State Educational Association Convention in Des Moines, October 15-16, 1964; Iowa Association of Secondary School Principals dinner October 15, 1964; Study Commission of the Council of Chief State School Officers Workshop, Des Moines, October 16, 1964; Midwest Educational Data Processing Conference, Madison, Wisconsin, October 26-28.

New York State Educational Data Processing Conference, Syracuse, November 12, 1964; Data Processing Managers Association meeting, November 17, 1964; Marquette University Conference on Data Processing in Catholic Educational Administration, December 10, 1964; American Statistical Association meeting, Chicago, December 28, 1964.

American Educational Research Association Conference, Chicago, February 10-12, 1965. American Association of School Administrators Conference, Atlantic City, New Jersey, February 12-17; Mott Foundation Conference, Flint, Michigan, March, 1965; University Council for Educational Administration Seminar, Iowa City, April 25-29, 1965; Association for Educational Data Systems meeting, Miami, Florida, May 9-11, 1965; Northwestern Bell Seminar, Chicago, June, 1965; Iowa Association of Secondary School Principals Summer Conference, Lake Okoboji, Iowa, July 1, 1965; Midwest Title V meeting, Iowa City, July 8-9, 1965; Stanford Flexible Scheduling Workshop, Palo Alto, July 19-22, 1965.

Army Management Engineering Training Agency Seminar, Rock Island, Illinois, August 3, 1965; Iowa City (Iowa) Optimists Club, August 4, 1965; Des Moines Taxpayers Association meeting, September 9, 1965; North Central Association meeting, Iowa City, September 23, 1965.

Illinois State Data Processing Committee, Iowa City, September 29, 1965; IBM Teleprocessing Seminar, Cedar Rapids, Iowa, September 1, 1965; Northwestern Bell Communications Seminar, Chicago, September 1, 1965; National Council of Schoolhouse Construction meeting, Lincoln, Nebraska, October 4-7, 1965; Iowa State Educational association Convention, Des Moines, October 22-23, 1965; IBM Customer

Executive Class, Poughkeepsie, New York, October 26, 1965; Northwestern Bell Communications Seminar, Chicago, October 28-29, 1965.

AEDS-Stanford University Conference, Palo Alto, November 1-3, 1965; American Counselor Education Association meeting, Chicago, November 5, 1965; Urban Policy Conference, Iowa City, November 6, 1965; Business Education Teachers Workshop, Iowa City, November 13, 1965; Governor's Education Conference, Hawaii, November 16-21, 1965; Educational Data Processing Workshop, Normal, Illinois, November 30, 1965; Iowa Capitol Chapter of the American Society for Public Administration, Des Moines, November 30, 1965.

Northwestern Bell Teleprocessing Seminar, Chicago, December 20-21, 1965; Iowa Guidance Leadership Conference, Iowa City, January 11, 1966; City Superintendents of Schools meeting, Marshalltown, Iowa, January 23-24, 1966; School Facilities Council meeting, Ames, Iowa, February 3, 1966; National Association of Secondary School Principals, Cleveland, February 5-9, 1966; American Association of School Administrators Convention, Atlantic City, New Jersey, February 12-14, 1966; American Educational Research Association Convention, Chicago, February 16-19, 1966; American Air Force Symposium, Salt Lake City, Utah, February 18, 1966; Phi Delta Kappa meeting, Des Moines, February 21, 1966; WaMac Conference Quarterly Principals meeting, Tipton, Iowa, March 9, 1966; Commission on Hospital and Federal Activities meeting, Ann Arbor, Michigan, March 11, 1966.

Visitors Briefed

In addition to dissemination activities outside the Iowa Educational Information Center, hundreds of educators, vendors, and business and municipal officials were briefed at the Center. For many, the briefings lasted several days and included depth reports on all Center activities, a tour of the facilities, and individual conferences with staff members. Slide presentations were utilized in many instances. The latter presentations were prepared by the Center's audio-visual department and included overviews and descriptions of different services. The presentations, of course, were geared to the respective group. For people unfamiliar with computerization, the overview was appropriate. For guidance counselors, a slide presentation on student ranking was used. For those interested in information retrieval, a presentation on Project TUHL (developed by the Center staff) was offered, etc.

Preparation of displays and photography involved in the slides were done by Information Center staff members. Processing of slides was done by private firms.

List of Guests

The list of Center guests is impressive:

Officials of the U. S. Office of Education; Dr. Marvin Ingle, Director of Data Processing for the Iowa State Department of Public Instruction; Gil Boyer, Director of the New England Educational Data Systems; educators from Malaysia, Singapore, Germany, Norway, Sweden, Pakistan, and Puerto Rico; Dr. Robert Beynon and E. G. Hoff of Ohio State University; representatives of the New York State Board of Education; Carsten D. Leikvold, City Manager of Iowa City; Dr. Kenneth M. Miller, Director, Research Unit, for the London University Entrance and School Examination Council; D. Russell Friend, Data Systems Coordinator, Department of Public Instruction, Dover, Delaware; James J. Fast, Jr., Executive Secretary of the Association for Educational Data Systems.

Francis Flerchinger of the State Department of Public Instruction, Olympia, Washington; Frederick Reuter, Teacher Education Advisor for the United States Operation Mission to South Viet Nam; Dr. Ben Alexander, a pediatrics specialist and director of the Miami Head Start program; Dr. Richard Miller, Director of the University of Kentucky's Program on Educational Change.

Dr. Walter Burnett, Director of the Iowa Mental Retardation Planning Unit; Bert Faldet of Science Research Associates, Chicago; County Attorneys' Advisory Committee on Youth Activities; State Senator Robert Burns; Gene Coffey, chief of the Iowa State Department of Public Instruction's Building Section; Don Bushnell, Associate Director for Research and Development of the Brooks Foundation, Santa Monica, California.

Taylor Whittier, Superintendent of Philadelphia Schools; Dr. Ernest Anderson, University of Delaware; Dr. Robert Gates, Florida Department of Education; Dr. Jack Bicknell, Minnesota Department of Education; Dr. John W. Hamblen, Southern Regional Education Board, Atlanta, Georgia; Philip S. Shaw, Florida Department of Education; Stanley R. Patton, Director of Data Processing for the Chicago schools; Justin Schaplin and Wade Robinson, Washington University of St. Louis; representatives of the Bureau of Cooperative Educational Services, New York; Sam Bliss, Director of Statistics and Data Processing for the Office of the Superintendent of Public Instruction, Illinois; representatives of the Center for Study of Higher

Education, Berkeley, California; Dr. Donald Anderson of the University Council for Educational Administration; Frank Nye, Editor, Cedar Rapids Gazette; Mrs. Sherman Watson, President of the Iowa State P-TA, and five other State P-TA officials; Dr. William G. Katzenmeyer, University of Wisconsin.

Barbara Rosenquist, System Development Corporation, Santa Monica, California; James Gallagher and William Schell, College of Education, the University of Illinois; Kenneth Shibata, Operations Director and Coordinator for the Research Coordination Unit, University of Nebraska; Michael Munger, statistician and programmer, University of Nebraska; Miss Reiko Tsumura, Comparative Education Researcher, Ministry of Education, Tokyo; representatives of the Newton, Massachusetts, Data Processing Center for Pupil Personnel; Dale Hall, Director of the Indiana University Computer Center; William Chilters, College of Education, University of Indiana; William G. Savard, Assistant Superintendent, Research, Statistics, and Data Processing, Hawaii State Department of Public Instruction; Cliff Brown, Director of Data Processing for the Cedar Rapids (Iowa) Public Schools; Dr. Robert Granger, Assistant Superintendent of Schools, Wayzata, Minnesota.

Articles, Papers Published

Articles concerning the information system were published in several magazines and educational journals, including Midland Schools, Monitor, Epsilon Bulletin, and the State P-TA Bulletin. In addition, two papers published in the monogram, Computer Concepts and Educational Administration, also concerned the CardPac information system.

VII. OTHER INFORMATION SYSTEM PROJECTS

The CardPac System of Educational Accounting, although making up the bulk of this report, is only one of many Iowa Educational Information Center projects involved in the goal of a total information system. Following is a description of these related projects:

Collection of School Facilities Data

Facilities data collection procedures and instruments are being developed and identification has been made of types of data to be collected and the methods to be used.

The facilities track is being integrated with CardPac and a program has been written to obtain instruction room numbers from CardPac data that have already been collected.

The actual collection of data will begin in the summer of 1966 with the identification of school plants (sites, and buildings on the sites where instruction takes place). These data will be printed out and sent to schools for verification. At the same time the schools will be asked to supply the floor location of the classroom, area, and number of pupil stations in the room. A program has been written to feed back this information, taking pupils and courses identified in these spaces and showing space utilization data based on the actual numbers and recommended square footage standards. Collection of this information is planned as a function of the central administrative office, not the principal.

Once all this information has been collected and integrated, it will be fed back to schools for verification. Then additional information will be requested on all sites, including non-instruction areas (e.g., square footage in corridors), and adjunct instructional spaces (e.g., preparation rooms next door to biology rooms). This also will be integrated, fed back, and verified, with the schools receiving space utilization and allocation data. Plans are also being made to collect other data on space such as linear feet of blackboards in each room and the number of electrical outlets.

Integrated Personnel-Payroll Project

The Iowa Educational Information Center is working with the Iowa City Community School District in preparing an integrated personnel-payroll plan that can be adapted statewide. The educational specifications and systems procedures have been developed and the plan is ready for the computer programmer.

The integrated personnel-payroll plan will meet Federal Accounting Handbook specifications and also will satisfy the requirements of personnel accounting (Iowa Professional School Employees Data Sheet, absenteeism, accidents, etc.). Other functions include the printing of contracts and performance of payroll accounting details (retirement system, W-2 Forms, etc.).

Elementary Pupil Inventory System

An Elementary Pupil Inventory System was tested during the first semester of the 1965-66 school year in 11 Iowa City schools (4,698 pupils), and a revised system will be implemented statewide in all public elementary schools in the spring of 1966.

A gradual familiarization process is planned whereby the schools will be asked to provide or verify only a small amount of data at the start, then supply additional information as they become more familiar with the system.

Initially the schools will be sent preprinted information on pupils in grades 3-6 who have taken the Iowa Tests of Basic Skills. This information, which is taken from ITBS files, will include name and grade level. Local schools will be asked to supply name, grade, sex, and birth date for pupils in kindergarten, first, and second grades, and others in grades 3-6 who are not in ITBS files. "First-time" information and any corrected data will be keypunched and integrated with test scores already on file.

Curricular and staff information collected by the Iowa State Department of Public Instruction will be integrated with the pupil information to give the basic file a broader base.

Once the basic pupil data have been collected, class lists can be printed and academic marks picked up. Hopefully, this may be done during the initial statewide administration.

More data will be collected in the fall of 1966, and by the following spring pupils may be asked to stencil identification numbers on their Iowa Tests of Basic Skills. Eventually, the pupils will be grouped by class. Attendance collection procedures also will be incorporated.

Computer Scheduling

Computer Scheduling, one of the Information Center's three UPDATE subscription services, was initiated in March, 1963, by The University of Iowa's College of Education through its Iowa Center for Research in School Administration. Twelve Iowa secondary schools were scheduled initially, and that total has grown to 79 for the 1966-67 school year.

Success of this pilot program strengthened plans for a complete Iowa Educational Information Center which would bring the benefits of data processing to Iowa schools and establish The University of Iowa as a leading source of information needed by educational psychologists and others engaged in behavioral study.

The scheduling program developed by the Center does not build the master schedule--it provides aids for the principal in building the master schedule and "loads" pupils into classes defined by the principal in this master schedule.

The system has been refined and improved each year. The second year of operation resulted in transition from a barebones basic program to one far more sophisticated than originally planned, demonstrating that the system can be an invaluable aid in preparing the best possible schedule for a school.

Improvements for the third year--1965-66--included furnishing rosters of pupils enrolled for each course as well as lists of courses requested by each pupil. Also a system was developed which makes possible the separation of a single large group of students into smaller groups of various sizes for different kinds of activities and classes. It also enables the school to combine small groups which were originally members of different large groups. Thus two groups of 60 boys and 60 girls could be assigned to different physical education classes on two days of the week, regrouped to assign 30 boys and 30 girls together for music on two other days, and bring the whole group together into a single large study hall on the fifth day of the week. This type of procedure will accommodate nearly unlimited combinations of schedules, classes, and activities.

The schools subscribing to Computer Scheduling for 1965-66 represented 45,000 students and were all Iowa schools except one (Mitchell, South Dakota). However, a special effort to attract out-of-state schools for the 1966-67 scheduling year was made and produced outstanding results. Several Illinois, Minnesota and Wisconsin school systems contracted for the service for 1966-67 and others indicated an interest in adding the service later but were unable to do so for the 1966-67 scheduling because of prior commitments.

Scheduling orientation meetings were conducted at seven Iowa sites October 28 through November 9, 1965, and at seven sites in Wisconsin, Minnesota, and Illinois November 17 through December 1. Followup meetings were then held with administrators who expressed an interest in the service at the orientation meetings.

The UPDATE scheduling service includes pupil directory information, conflict matrix, master section list, error list, class loading report, homeroom, grade, and school rosters, schedule cards, list of sections taught each period of the day, list of pupils requesting each course, preliminary schedules, class lists, homeroom lists and class rosters, study hall lists, a continuous form listing of all pupil schedules, and identification cards.

UPDATE can schedule by block time, varied period, revolving, or conventional master schedules.

The system offers four distinct advantages not generally available: (1) Educational data processing consultants with experience as school administrators to assist principals in scheduling, (2) a commitment to provide the best possible schedules without specified limitations on the number of individual course request changes needed, (3) capability to hold pupils in groups and/or subgroups for a series of classes or activities, and (4) an on-going research program to improve the educational services to local schools.

Flexible Scheduling

As an experiment, the Information Center scheduled one school--Pleasant Valley--for the 1965-66 school year through the Stanford Flexible Scheduling Program which builds the master schedule as well as loads the pupils into classes. The scheduling was done with computers at Stanford University.

The Center and Stanford have reached an agreement for adapting the Flexible Scheduling Program. IEIC is rewriting the procedures involved and will test the program during the 1966-67 school year, building schedules for the 1967-68 school year. Schools will be offered an opportunity to remain in the regular scheduling program or enter the flexible program.

One of the objectives of the Flexible Scheduling Program is to identify particular variables that affect the outcome of the program.

Attendance and Mark Reporting

The periodic reporting of pupil attendance and marks has traditionally imposed routine clerical work on teaching personnel who should better use the time for teaching, study, or class preparation. The application of modern computer technology now makes it possible to relieve school staffs of much of the clerical detail that occurs at each reporting period. To this end the Iowa Educational Information Center has developed an automated Attendance and Mark Reporting Service which features an efficient method of reporting data by the school staff, machine-processing of the data and preparation of reports, and additional feedback of compilations and summaries for analysis and evaluation by the principal.

Pilot projects in Attendance and Mark Reporting were initiated in selected secondary schools in 1963 and extended to elementary schools the following year. UPDATE pupil report forms were prepared for 14,000 elementary and secondary school pupils during the 1964-65 school year. The service has expanded to include 51 schools and 24,000 pupils during the 1965-66 year, including 4,698 pupils in 11 Iowa City elementary schools.

Ten orientation meetings were held with interested administrators September 15-21, 1965, to acquaint them with the Attendance and Mark Reporting. These meetings quadrupled the number of schools participating in the service. However, the meetings were held too late to gain maximum response for the current school year but many of the administrators, including some from neighboring states, expressed an interest in eventually participating.

The service is compatible with other UPDATE services and the CardPac program. It offers non-returnable pupil report forms for the parents plus two copies for school use, class lists with cumulative pupil marks for teachers, counselors, and principals, anecdotal remarks from teachers to parents, computed mark-point averages and rank-order lists, frequency distributions of pupil marks by teacher, course, and schools, attendance summaries for pupil report forms, office use, and State reports, and pressure-sensitive pupil attendance and mark labels. Attendance records provide the principal with data for preparation of the State Department of Public Instruction Attendance Report.

As part of the Attendance and Mark Reporting Service research, a survey was made of academic mark procedures and mark-point averages in Iowa's secondary schools. The results were published in booklet form and fed back to administrators. The summary was forwarded to administrators without interpretation as a status study of practices that now exist in Iowa secondary schools. It may serve as a guide to each principal as he evaluates practices in his own schools. After analyzing the data, principals were asked to make suggestions for other information needed in planning future studies. An analysis of the academic mark survey was accepted for publication in an Iowa magazine whose readership includes many school teachers and administrators.

In developing the Attendance and Mark Reporting Service, the systems planners provided considerable flexibility so that schools may select a procedure most applicable to the individual district. The system was modified to conform to the practices found to be most widely used among the schools in the above-mentioned survey,

The UPDATE computers preprint much of the stored indicative information on machine-readable report forms, and school staffs report new data by simply marking appropriate areas with an ordinary pencil. On a single Mark Report Form a teacher can record marks for 18 pupils and indicate as many as four anecdotal remarks applicable to each pupil from a list of 24 prepared in advance by the school.

Summary attendance cards are prepunched for each pupil and the attendance data are summarized at the end of each reporting period. The pupil's attendance record, academic marks, and teachers' remarks to parents are combined on a Pupil Report Form. This form is prepared in triplicate, providing a non-returnable parent's copy and permanent copies for the principal and counselor or homeroom teacher.

There is usually about a 10-day turnover, including week-ends, between the time schools send the attendance and mark data to the Information Center, where they are processed and mailed back. This contrasts with a two- or three-day period which elapses during the ordinary manual recording of marks and attendance. Under the latter system the pupils receive their report cards quicker, but it may take a teacher 20 minutes per class when manually recording marks on individual report cards. If she has five classes, that adds up to 100 minutes. A school with 50 teachers, for instance, might lose 5,000 minutes or 83 man hours each reporting period.

Under the UPDATE system, printed class lists are distributed to a teacher for each of her classes. Pupil names appear on the list along with previous academic marks in the course, if any. In most cases, only one black dot is all the teacher needs to grid to indicate a pupil's mark. The form has an area where a dot may be gridded to correct a mark which may have been recorded incorrectly for the previous reporting period. There is also an area where a dot indicates an anecdotal remark concerning a pupil's work in the course, which is also reported to the parents.

A frequency distribution of marks according to individual teacher and courses is provided for the principal to give a perspective of the distribution of marks in his school.

Attendance of each pupil is recorded on a prepunched card which prints on it the pupil's name, grade, and other certain indicative information. Areas are provided to grid the number of absences and times tardy. An accumulative attendance card shows any daily pattern of absences or times tardy, which is extremely valuable to larger schools in enabling them to recognize that a pupil problem may exist.

The heart of the Attendance and Mark Reporting system is that things are done in a systematic manner. A school has many options on how it wishes to retrieve data. The Center tries to develop a program that will fit a school's needs, not vice versa.

Student Ranking Service

The UPDATE Student Ranking Service had seven participating schools with 4,244 pupils during the 1965-66 year and is evaluating 1,425 pupils in three Iowa schools for the 1966-67 school year.

Evaluation is made according to selected attributes for differential grouping into sections so that instruction can be more closely tailored to the majority of pupils, and course marks can be assigned more objectively within the sections.

Modern education often calls for the placement of pupils into categories with respect to homogeneity on a number of measured attributes. "Ability grouping" is one such example of categorizing pupils, usually in respect to measured potential to master specific course material. Assignment of course marks based on test marks within the courses is another example.

The computational tasks involved in evaluating each pupil on a number of measures for differential grouping often result in abandoning a careful evaluation scheme in favor of one that is less exact but more expedient. Thus many educators have expressed their need for a defensible and reliable method of ranking pupils without exceeding limited time and money resources.

The Iowa Educational Information Center has developed a Student Ranking Service (SRS) which employs the modern digital computer to do the routine computational tasks involved in evaluating pupils on multiple variables and assigning each pupil a respective rank. SRS also produces as a by-product summary statistics useful to school personnel engaged in other pupil evaluation or guidance procedures.

The Student Ranking Service is designed to utilize data already available through the statewide CardPac System of Educational Accounting, the Iowa Testing Programs, and other UPDATE subscription services--Computer Scheduling and Attendance and Mark Reporting. This enables the school to take advantage of the SRS program with a minimum of additional data collection.

The Student Ranking Service enables the principal or guidance counselor to evaluate pupils for placement in various course sections according to measures established on the basis of past experience or as a result of a statistical analysis such as multiple regression. Some of the more frequent measures used are:

1. Sub-tests or composite scores of the Iowa Tests of Educational Development.

2. Prior course marks.
3. Intelligence test scores.
4. Differential aptitude test scores.
5. Teacher recommendations.
6. Special area tests such as the Coop English Test, Iowa Algebra Aptitude Test.
7. Interest measures such as Kuder Preference Schedule, Strong Vocational Interest Blank, etc.

The goal of the Student Ranking Service is to provide the means for determining a pupil's relative rank within a group based on measures which are definable on a numeric scale. SRS ranks pupils in appropriate groups according to specifications set forth by the local school system. SRS does not establish the criteria on which to base this ranking. Schools utilizing the Ranking Service must answer the following questions:

1. Which pupils are to be ranked?
2. What measures or variables are to be used in evaluating rankings in each group?
3. How much weight is to be given each measure used?
4. Which pupils are to be evaluated for which groups?

The counselor or principal specifies data to be prepunched into Group SRS Identification Cards and Student SRS Data Cards, and then completes the cards by filling in additional information.

The Group SRS Identification Card provides space for identifying a course in which pupils are to be grouped and space for variable weights or multipliers to be used in ranking pupils in the course. One card is completed for each group in which pupils are to be ranked.

The Student SRS Data Card provides space for identifying up to six groups in which the pupil is to be ranked and scores made by the pupil on the variables to be used in ranking. One card is completed for each pupil to be ranked.

Student ranking can be performed at any time, but principals who plan to use it as an aid to scheduling should submit a request by December 1 and complete a planning conference by December 15. The ranking process can then be completed by February 1 in time for application to the fall pupil scheduling.

SRS has been developed as a means of reducing mundane computational tasks in the process of ranking pupils on a number of measures. It is hoped that it will provide an incentive for improving the practice of grouping pupils by ability as well as provide a useful means of evaluating pupils for other purposes.

Touch-Tone Data Transmission

A preliminary investigation of the feasibility of touch-tone transmission of pupil data was conducted by Assistant Director Peter P. McGraw at the Iowa Educational Information Center during December, 1965. Results of the brief investigation indicate that the new transmission scheme will prove to be economically feasible for school systems of any size.

The new touch-tone telephones, which employ push buttons instead of a dial, transmit tones in various combinations which are translated at the receiving end into electrical impulses by a data set. These impulses are fed to an IBM 026 Model 6 Card Punch to activate the numeric keys as well as other functional switches. The only equipment at the sending station is the telephone instrument which is equipped with a card-dialing slot, 10 numeric keys, and 2 extra function keys. The 2 extra keys send signals to talk, and to indicate end of record (EOR). The local telephone company in Iowa has a monthly surcharge of $5.25 for this instrument.

The automatic card-dialing feature permits the user to dial the phone or transmit data by punching out holes in a plastic card. The card which has a capacity of 14 characters or signals is easily prepared with a stylus or ordinary pencil point.

The receiving equipment consists of a data set furnished by the telephone company and an IBM card punch. The data set, including a standard telephone headset and dial, rents for $15.00 per month. The special card punch which is available as standard equipment with approximately a four-month delivery schedule rents for $125.00 per month. It may be used as a standard alpha numeric punch when it is not receiving data. It is also possible to interface the data set to teletype machines, paper punches, or computers.

The preliminary investigation at the Iowa Educational Information Center was made with enrollment and attendance data. The Iowa City Public Schools installed a touch-tone phone with a card dialer at the Lincoln Elementary School which has 280 pupils in grades kindergarten through 6. The procedures were developed by Peter P. McGraw and Don Morgan of IEIC and Richard J. Hovet, principal of Lincoln Elementary.

The school's normal procedures involved having teachers submit lists of absent and tardy pupils to the principal's office each morning and afternoon. This procedure was not changed. The lists are normally posted by the school clerk to individual pupil cards. The postings on the cards are then summarized each nine weeks for mark reporting to parents, and each semester for local and state ADA reports. Optical scan forms are utilized.

The touch-tone procedure involved the use of two decks of plastic cards, (1) a set of pupil cards arranged by homeroom, and (2) a set of header cards for each type of transaction, such as absent A.M., absent P.M., absent all day, tardy, etc. The plastic pupil cards contained the following information:

Column	
1 - 5	Pupil Number
6	School Day Code 0 - All Day 1 - A.M. Only 2 - P.M. Only (Other codes would be added for adult evening classes, etc.)
7	Type of Pupil 1 - Regular 2 - Exceptional
8 - 9	Room Number
10	Residence Code 0 - Resident 1 - Non-resident
11	End-of-Record Signal

The plastic header cards were punched as follows:

Column	
1	End-of-Record Signal
2	Stop Signal
3 - 6	School District Code

6 - 8	School Code
8 - 10	Transaction Code
	017 Absent all day
	016 Absent A. M.
	026 Absent P. M.
11	End-of-Record Signal
12	Stop Signal
13	End-of-Record Signal

At the receiving card punch, a card layout for the control drum was prepared as follows:

Column	
1	Blank
2 - 9	12 punch
10	12 and 9
11	12 punch
12	Blank
13	11 punch
14 - 15	12 punch
16 - 30	Repeat above pattern
31 - 45	" " "
46 - 60	" " "
61 - 75	" " "
76 - 80	11 punch

The pattern established in columns 1 - 15 will accept a 10-character record. It is repeated four additional times to allow the punching of five pupil records in each card.

The 026 Model 6 Card Punch has a special feature to provide a validity punch after each record which contains the proper number of digits. This feature is operative if the control drum has a 9 punch in the last position of the record and if an end-of-record signal is transmitted following the record. It will be noted that there is a 9 punch in column 10 of the aforementioned card layout. If the correct number of digits has been transmitted, an 11 punch will be made automatically after each pupil record. If the end-of-record signal is sent at any other time, the card will be skipped out. In the header card described previously, this feature is used to move the header card out after it has been punched. In this way, we were able to create one card with header information only, followed by detail cards with five pupils per card.

The following steps by the school clerk and the resulting action of the receiving device will help to illustrate the application of the device for attendance accounting:

1. SCHOOL: Clerk dials phone at the receiving data set.

   IEIC: Clerk answers phone, turns on card punch, and presses data button on data set.

2. SCHOOL: Clerk listens for tone signal which tells her card punch is ready. She selects plastic header card labeled "Absent A.M. Only," inserts it in card dialer and presses button, card moves one space transmitting EOR signal and stops.

   IEIC: Card punch receives EOR signal and (because there is no 9 punch in control drum in column 1) skips any card out from under the punch head and feeds in a new card.

3. SCHOOL: Clerk listens for ready signal and then presses card dialer button again. Plastic header card rises 11 spaces transmitting header card information (10 digits) and EOR signal and stops.

   IEIC: Card punch receives and punches 10 digits, and receives EOR signal which causes punch to put a validity punch in column 12. (The validity punch is an 11 punch.) Note that we get a validity punch instead of a skip because the control drum card has a 9 punched in column 10.

4. SCHOOL: Clerk presses card-dialer button again and plastic header card is ejected transmitting another EOR signal.

IEIC: Card punch receives EOR signal and (because there is no corresponding 9 punch in the control drum) skips the header card out from under the punch head.

5. SCHOOL: The clerk selects the pupil card for the first pupil who was absent in the A.M., inserts it into the card dialer, and presses the dialer button. The card rises in the slot transmitting 10 digits plus an EOR signal.

IEIC: The card punch punches 10 digits plus a validity punch and skips to column 16.

6. Step 5 is repeated for all pupils who were absent in the A.M. only. The card punch puts five pupil records in each card until they are all punched.

7. The clerk repeats steps 2, 3, and 4 to create another header card for absent P.M. only, followed by step 5 for all pupils involved, etc. This procedure results in individual header cards followed by detail cards containing up to 5 pupils each.

One objective of the project was to develop a system that was simple enough to explain to a new clerk by phone. Instructions were given to the school secretary, Mrs. Judy Gardner, in two minutes. Mrs. Gardner, who was very cooperative and who had several years of secretarial experience in other positions, is probably superior to many school clerks, but she understood the new procedure after one trial and felt confident that the average school secretary would have no difficulty understanding the system.

The first procedure tested required Mrs. Gardner to select the pupil cards from the box, arrange them in groups, transmit the data and refile the cards. Volumes were slightly above normal during this test. Average times were as follows:

	Transactions	Total Time	Time per Pupil
Selecting cards	23	300 sec.	13.0 sec.
Transmission	23	195 sec.	8.5 sec.
Refiling cards	23	270 sec.	11.7 sec.
Total			33.2 sec.

In an alternate procedure, in which the header card was eliminated and the transaction was keyed in manually, each card was pulled, transmitted, and refiled in one operation. This procedure averaged 15 seconds per pupil, which doubled the transmission time but reduced the total clerical time by 50 per cent. The increased transmission time would not be critical except for long distance charges.

The manual posting operation required an average of 4.5 minutes per day plus 6 hours each 9 weeks to summarize and transfer the totals to an optical scan document. When this total time of 562 minutes is averaged for 900 entries during the 9 weeks, the result is 37.4 seconds per entry. It should be kept in mind, however, that this does not take into account the time involved in preparing the individual record cards, distributing them to the school, preparing and distributing the optical scan forms, and the processing of the optical scan sheets to obtain a machine readable record.

It appears to be economically feasible to create an individual daily record of entries, withdrawals, absences, and tardiness through touch-tone transmission in small or large agencies rendering educational data processing services. The total clerical time involved will be approximately one minute per day per 100 pupils in membership.

The Bell Telephone System has completed field tests on an automatic drum-dialing device on which can be recorded 1000 pupil records. This device will eliminate the need for the plastic cards and will reduce card handling twice.

The touch-tone system is being used in industry to transmit warehouse requisitions and record job costs. It should be possible to record payroll and other financial data as well. When interfaced with a random access computer file and a recorded message device controlled by the computer, it should be possible to give every school employee direct access to computer-stored information.

School Census

The Iowa Educational Information Center has helped three Iowa communities automate their school census procedures, beginning in 1964 with Council Bluffs and Des Moines. Those same two communities are working with IEIC in 1966 and a third community, Cedar Rapids, has called upon the Information Center for advice and also processing help with mark-sense forms since the Cedar Rapids schools do not have optical-scan devices.

IEIC entered into its data bank census information on 11,000 Des Moines pupils in 1964 and 13,000 Council Bluffs pupils in kindergarten through grade 12.

Cedar Rapids will use preprinted mark-sense cards in gathering new data in 1966 and verifying data collected in 1964. The city is gridded so that individual blocks can be identified and all persons under 21 identified, tied to each block by a unique code, and then tied to the appropriate school.

Council Bluffs also plans to utilize the Cedar Rapids procedures in 1966 while Des Moines still had not finalized its program as of this writing.

The systems procedures involved in the 1964 Des Moines census began with a batch of original documents--Family Census Record cards--which collected the following data: District designation, name of parent or guardian, street address, names of all persons under 21 years of age, their status in the family, race, sex, age as of June 1, 1964, birth date, grade level completed, school attending, occupation of older members of family under 21, record of blind persons (over 21) and speech and hearing defectives (21-35), name of handicapped person, age, type of handicap, address (if different from that of family). The following code was used for classifying handicapped individuals: Mentally retarded--M, blind--B, partially blind--PB, deaf--D, partially deaf--PD, speech--S, crippled-C, heart--H, tubercular--T.

The Family Census Record was keypunched and verified, then put on magnetic tape. A 1401 tape-to-card program punched the census cards, arranging them alphabetically by parent's last name. These cards were then forwarded to the Des Moines school system.

Systems procedures for the Council Bluffs census were similar, although the information gathered was more comprehensive. Data requested in addition to that sought in the Des Moines census were authority for date of birth (school card, baptismal certificate, passport, Bible record, parents' statement, child's statement), birthplace of child or parent, kind of school (public, boarding, parochial, business, college), how employed (list of 22 occupations), if not enrolled in school and not employed (married, illegal non-attendant, just moving to city, order of the doctor, armed service), defective (including epileptic, idiotic), names of non-attendants, their employers, and the addresses of the employers.

During the last school census in 1964, Cedar Rapids was gridded so that individual blocks could be identified, 10 or 12 of these blocks were grouped into areas, and the areas in turn formed elementary school districts. All persons under 21 were identified, approximately 42,000, tied to each block by a unique identifying code, and then tied to the appropriate school. This code remains the same.

The census also included a second card requested by city officials for collecting traffic survey information (number of automobiles, route to work, how many working, how many families in the dwelling).

The census questions must be simple enough for canvassers to handle. In 1964 canvassers were furnished with a map of the area they were supposed to cover, given blank cards to mark sense, and then identifying information--name, block code, address, and other mark-sense data--was keypunched. If there was no one under 21 at a residence, no card was collected for the school census; however, the city picked up every dwelling in the traffic survey. Tabulation revealed that about 82,000 cards were collected, 40,000 for dwelling units and 42,000 for persons under 21. The city also picked up traffic information from the Marion and College Community school districts.

The data not only provided the usual State reports but helped in school redistricting, showing how many children were in a particular area, including preschoolers. Mailing labels were made for those coming into school in the fall of 1964. The entire operation would have been very difficult without a computer because of the size of the City of Cedar Rapids.

Many errors were made by canvassers who collected the data, and a major clerical job was necessary to clean up the cards for computerization.

The Cedar Rapids School District budgeted about $10,000 for the census, which did not include the time of some administrators. One-hundred canvassers were paid approximately $6,500 (eight cents per card), and the keypunching cost about $3-4,000.

The data were analyzed in various ways. The number of handicapped was broken down by school district (mental, speech, physical, blind, or deaf). Pupils per block, area, and district were tabulated; when new junior highs opened up in the fall of 1964, they were told approximately how many pupils to expect.

Since the 1964 census, the 40,000 city traffic survey cards were sorted by computer (verification included printing out of every variation of street spelling and correcting this and making sure there were four digits in addresses). The city cards could then be tied to the block code and address on the corresponding school census cards. Via this process, the public schools were able to build a student data bank, tying the students to a dwelling. In addition, the spelling of street names was standardized. The collected data also enabled the schools to build a data bank of preschoolers. Since the system has been standardized, various sorting methods can now be utilized.

By making the data as accurate as possible and updating them, much more can be done with the data. Student enrollments can be used in laying out bus transportation patterns. By the fall of 1966, enough data should be available to tell the transportation department who they will have on their buses at the start of the term. In the past, this information has not been available until the first of the year, long after the term has started.

The parochial schools were very cooperative in supplying data. The city schools should be interested in parochial information for reasons such as the shared-time plan and also if the parochial schools find the load too much and are forced to drop certain grades.

Cedar Rapids wants to establish a perpetual census, picking up construction and platting of lots. Meter changes are now received from the gas and electric company to indicate construction changes, providing advance notice when families move which can be given to the appropriate school or schools. The meters are particularly valuable during summer, indicating new families in an area or that old families have moved into another area. The schools are given data such as the number of school-age children in new families.

In June, 1964, when the last census was taken, principals were sent tabulations on preschoolers. One school's own records showed that about 60 new children could be expected; the census figure was 81. This could mean the school might have to hire an additional teacher.

In conducting a new census, the student file of approximately 25,000 persons would be verified. It is hoped the parochial schools also will supply lists of pupils for verification purposes. Cedar Rapids would like to add to the new census a procedure for obtaining the number of preschoolers most likely to go into parochial schools. One item that might be dropped is the place of birth.

There was no attempt to systematize blocks, some of which might be a full section. Cedar Rapids school officials would like to pin down within 10 feet each dwelling unit by block with an XY code. The city has only one detailed map which shows addresses for fire department use.

Cedar Rapids' ultimate plan would include a headcount in identifying dwelling units. A large city map with code blocks and coordinates would be drawn up. Then the school system could take the information it has collected and use a computer to print this out to correspond to the addresses on the map. For example all parochial first graders could be pinpointed to find out what effect this could have on public schools if the parochial schools would drop the first grade.

Transparencies could be made of computer printouts and superimposed on the map of the city. This could be done with many kinds of data. IQ's and Mark-Point-Averages could be pinpointed, for example. Legal descriptions and assessed valuations could be picked up with the cooperation of the city and county, and the students from rich and poor families could be identified on the map.

Educational Data Bank

The Iowa Educational Information Center has completed the first phase in establishing an educational data bank and is now receiving requests for information stored in the bank.

A data bank is only as good as the data it contains and the procedures available for getting at the data quickly and economically. This bank is by no means complete, but with the help of local school officials and other educators it can provide a wealth of information necessary for State and U. S. reports, research, and, perhaps most important, information which can be a vital tool in decision-making at the local school level.

Professor E. F. Lindquist, Director of Iowa Testing Programs and President of the Measurement Research Center in Iowa City, described this decision-making aspect last spring at a meeting of educational administrators in Iowa City. "Not only teachers, school administrators, and school board members, but pupils and parents, and the general public as well should . . . be better prepared to make the many educational decisions that are required of them . . . The great extension and enrichment in the information that will be collected and reported to State and national agencies, and to the general public, concerning all aspects of education, should lead to more intelligent legislation, to improved bases of school support, to improvement in the services provided to the schools by the State and federal governments, and to an improved understanding of educational problems by the public as a whole."

The Information Center, through its data bank, serves as a clearinghouse for information about Iowa schools--as a central source from which external agencies may secure information without creating additional work for local schools. Schools are besieged by many requests for cooperation in studies of all kinds, and many of these could be referred to the Center.

Simply put, a data bank is a collection of data. They may be on magnetic tape, punchcards, computer printouts, mimeographed sheets, printed directories, handbooks, or just about any other conceivable means of physically keeping data so that it is accessible.

The Information Center's data bank, in addition to data collected by the Center, duplicates some of the information in State Department of Public Instruction and Iowa Testing Program files to give the data bank as broad a base as is possible at this time. In time, the bank will be expanded to include more data on facilities and finances. Much of the information has been integrated, making it possible to relate any item of information concerning any phase to any other item in the file.

The information collected by the Center consists chiefly of pupil, staff, and curriculum data gathered under the auspices of the State Department of Public Instruction. The Center also stores data on school censuses, the North Central Association, attendance and mark reporting, student ranking, and computer scheduling. The State Department data in the Center's data bank include such items as the Secretary's Annual Report, General Annual Report, teacher certification, program accounting reports (forms A and B, library, audio-visual, extracurricular activities, and guidance), graduate followup material, and private and parochial school reports.

The Center hopes to pool all of this data to provide local and State school officials, college educators, and perhaps municipal officials with a comprehensive storehouse of accessible information.

The first requests for information primarily have been for lists of teachers in special fields--English, home economics, etc.--and the names and addresses of schools and administrators. One principal asked for a list of Iowa teachers' salaries in relation to years experience. Another school administrator wanted to know to what extent music theory instruction is taught in grades 7-8-9. These examples, of course, only scratch the surface of the information available in the data bank and possible uses.

In addition to the obvious use of the data in graduate-level degree programs, the information can play a valuable role in policy decisions in local schools. An example might be the teachers' salaries-years experience request; an administrator could use such information in preparing a budget. Or an administrator might use the music theory instruction data in making a decision on whether to include this in his curriculum. The possibilities for decision-making are limitless if proper information is available and, more important, used wisely.

The State Department of Public Instruction wants to provide each school with the opportunity to offer the most effective educational program possible. The data bank will help the State Department and the schools reach this goal.

As more and more of this information becomes available for use at the local school level, consideration should be given to providing funds in the local school budget for research retrieval.

In general, information in the data bank file is available for research and administrative purposes to individuals or organizations both within the University and outside.

A Data Bank User's Manual to assist the researcher in determining the availability of data and procedures for their retrieval has been prepared.

The staff file contains information on all professional school personnel in Iowa public and private schools at the elementary, junior high, and senior high levels, as well as county and State Department personnel and professional employees of area vocational schools and junior colleges. Curriculum and pupil files contain information on the curricula and pupils of public secondary schools in Iowa.

Local school personnel will have access to all data submitted by pupils, the staff, or the administration of their school district upon submission of a written release from their district superintendent. The written release must accompany the request for data retrieval. Names and addresses of public school pupils will not be available for retrieval services except to local school personnel under the above conditions. However, names and addresses of professional staff personnel will be available upon request.

All other items will be available in such form as not to reveal the identity of any individual school or school district. Pseudo-ID numbers are assigned to preserve anonymity of the data.

All individuals, groups, or organizations publishing dissertations, theses, research reports, or any writings for which information from the data bank served as a basis for opinions, conclusions, or statements of fact shall print in a conspicuous location in the publication the following statement:

> "Certain data for this publication were provided by the Iowa State Department of Public Instruction through facilities of the Iowa Educational Information Center, University of Iowa. All analyses, opinions, or conclusions stated in this publication

are those of the author(s) and are in no manner
endorsed, substantiated, or otherwise supported
by the Iowa Educational Information Center."

Requests for information fall into one of the following categories:

1. Standard Data Retrieval. Provides items of data from one of the three data files (staff, pupil, curriculum) using a standard retrieval program.

2. Special Data Retrieval. Provides items of data from one of the three data files but requires writing and debugging special computer programs to retrieve the data or interrelate the data between two or more of the three files.

3. Standard Mailing Lists. Provide multilithed copies of names and school addresses of the chief administrators of public elementary schools, junior high schools, senior high schools, school districts, county offices of education, and non-public schools in Iowa. These lists are supplied free of charge.

4. Special Mailing Lists. Provide names and addresses of professional staff personnel in one or more functional classifications such as "high school English teachers," "directors of secondary education," etc. This type of retrieval requires a computer search of a special name and address file.

5. Standard Mailing Labels. Provide self-adhesive mailing labels containing the names and addresses of the chief administrators of public elementary schools, junior high schools, senior high schools, school districts, county offices of education, and non-public schools in Iowa.

6. Special Mailing Labels. Provide self-adhesive mailing labels containing the names and school address of professional staff personnel in one or more functional classifications such as "elementary music teachers," "supervisors of math education,"etc.

Center consultation available to researchers is intended to aid the researcher by providing the most valid and reliable data in the most efficient and economical manner possible. Consultation also will assist the researcher by structuring the output of the data retrieved in a manner which will permit further analysis and processing by computers and/or other automatic data processing devices.

In requesting information from the data bank, the user must write a letter indicating by reference number and item name the items of information desired and the output medium. Output media available include printed listings, punched cards, magnetic tape, or any combination of these.

The Information Center will estimate retrieval cost based on the request letter and forward a requisition to the user. This requisition must be signed by the user and returned to the Center before any retrieval processing will be initiated.

All correspondence for retrieval services should be addressed to:

Data Retrieval Services
Iowa Educational Information Center
The University of Iowa
Iowa City, Iowa 52240

Head Start Identification

The first statewide study in the United States of the educational record of Operation Head Start boys and girls through their first two years of elementary schooling will be made by the Iowa Educational Information Center under a $31,498 U.S. Office of Economic Opportunity grant.

The 4,300 4- and 5-year-olds who were in the eight-week Iowa project in the summer of 1965 will be identified in the spring of 1966 at their respective schools through the Elementary Pupil Inventory System.

Information Center and State Department of Public Instruction personnel determine what pupil information is to be collected and updated in the two-year study.

In planning procedures to identify the Head Start children, IEIC used OEO tapes which included information in nine categories: 1. Parent evaluation, 2. worker evaluation (non-professional), 3. worker attitudes toward Head Start, 4. preschool inventory on children, 5. psychological screening, 6. behavior inventory, 7. professional staff information, 8. parent participation, and 9. medical-dental records.

Interagency Case Information Service

The Interagency Case Information Service--a computerized data processing system aimed at improving care given the mentally retarded in Iowa--has been organized under a $107,633 grant from the U.S. Public Health Service, Division of Chronic Diseases. The Iowa Educational Information Service is providing the technical aspects such as computer programming and systems design.

The service would make pertinent information on the retardate as his needs change available on a confidential basis to the participating agencies who are providing patients with direct-care services. These agencies include the Division of Special Education of the Department of Public Instruction, the Child Development Clinic of The University of Iowa, the Des Moines-Polk County Center for Mentally Retarded Children, The University of Iowa Hospital School, State Services for Crippled Children, and the Woodward and Glenwood State Hospital-Schools.

A tentative form for the participating agencies to fill out as input for the information system has been compiled and is being revised periodically as the information needs of the participating agencies are determined.

Retrieval Library

A new approach to the problem of how to furnish information promptly about new literature is the mechanized Keyword-In-Context (KWIC) indexing method being utilized as a service of the Information Center's retrieval library.

The KWIC process is applied to the titles and abstracts of the documents. In order to produce a KWIC index of titles, bibliographical entries consisting of the retrieval code, author's name, title (including appropriate descriptors), source, and an abstract of each document are keypunched onto machine-readable cards so that processing can produce a printed index with its related bibliographical data.

Because of the speed of electronic data processing equipment, elapsed time between the date of publication of a document and its appearance in an index can be reduced from many months to a few days. In fact, if advance knowledge of forthcoming publications is available, a KWIC index may even include entries for documents that have not yet been issued. Since all bibliographical entries are made and stored in machine-readable form, the extension of such indexes into cumulative indexes may be accomplished without affecting promptness of publication of the index.

Another advantage of the KWIC indexing system is that it can be kept in operation merely by preparing a machinable record for each new document and maintaining an up-to-date keyword list by statistical means. Printout may be reproduced for distribution by any convenient process.

KWIC indexing can be adapted to the literature of any scientific discipline--in this case educational data processing--as well as to such areas as correspondence files, files of internally generated memoranda, legal papers, procedure manuals, etc. Since bibliographical entries for a KWIC index are made in machine-readable form, they may be used for other purposes such as the preparation of library catalog cards, accession lists, etc.

Printouts showing documents available in the IEIC library were run under a continuous program for the first time at the Computer Center January 25, 1966. Previously, each computer run had been made under five separate programs--KWIC 1, KWIC 2, etc.

More than 250 articles, books, and other documents related to educational data processing are included in the computerized bibliography at this time, and others are added daily. In addition to the bibliography, other related printouts used by IEIC are a list of keyworded wrap-around titles, list of works by author, and statistics showing how many times each key word appears in the library retrieval system.

An example of the coding used in the KWIC system is 3-DPMA-65-07-023. The "3" refers to the format, in this case a periodical, "DPMA"refers to Data Processing Magazine, "65" to the year, "07" to the issue, and "023" to the page.

The IEIC library could become a part of the U.S. Office of Education's Educational Research Information Center (ERIC) project if plans materialize.

Miss Diane Follmer, retrieval librarian, and Staff Associate William Miller discussed Eastman Kodak Company's microfiche service with a representative of the firm January 27, 1966, in order to determine the feasibility of using microfiche both to store information and to send information to the U.S. Office of Education.

Micro-File Filmcards (microfiche) are file-card size microforms of photographic film on which rows of 16-millimeter microfilm images are contact printed from master negatives. Each 4 x 6-inch Filmcard may contain 98 pages of information (from full-size 8 1/2 x 11-inch pages) in seven rows of 14 images (pages) each. The Filmcards are also available in a 6-rows-of-12 images format to meet National Microfilm Association Specifications for microfiche.

These Filmcards can be indexed in various ways, utilizing external indexes which refer to particular cards in the file, or internal indexes on the Filmcards themselves. The system used to create Filmcard master negatives makes it possible to update any single row on a given Filmcard without rephotographing the other rows of images to be retained on the card.

Microfilm and microfiche are compatible, making it possible for IEIC to use 16-millimeter or 35-millimeter film for contact prints.

Vocational Education

Plans to collect information on vocational education schools through the CardPac System of Educational Accounting are being developed after discussions with vo-ed officials in the State Department of Public Instruction.

The vocational education program has been divided into the following sections for data collection purposes: General agriculture, home economics, industrial arts, business education, trade and industrial education, technical education, and distribution and marketing education.

A code system for courses under these various sections has been developed so that the courses can be tied to pupils and teachers.

A #20 Card will serve as the input document for picking up the vo-ed information. The card will pick up the following information: Teacher's name, course and section number, subject title, semester hours in subject area, type of pupil (gifted, regular, handicapped), course level of differentiation (above average, average, below average), enrollment by grade level, room number, days-met pattern, period, length of period, beginning time.

Many new area vocational schools are planned in the near future in the State of Iowa. Since these schools must develop procedures and processes for handling information in the five tracks--staff, curriculum, pupils, facilities, and finance--CardPac could answer this vital need.

The area vocational schools present a unique opportunity to develop an integrated information system without causing duplication and disruption of existing systems. The schools also offer a unique laboratory implementing the integrated systems approach because of the small numbers of schools to be established and by providing the necessary lead time for planning before the system is implemented. The staff of each school will have an opportunity to participate in the development and implementation of the systems. The staffs also will be entering a new situation and the procedures and routines will not be viewed as "Change."

Data contained in a complete file from the inception of the new area vocational schools will provide, for the first time, the possibility of comparisons and evaluations of the schools. By providing for a common integrated information system, the effects of change either natural or experimental in any of the units can be better assessed. And the system can serve as a model for the establishment of other area vocational schools in and out of Iowa.

Looking into the future, the groundwork will have been laid for the establishment of regional centers for information services.

Iowa Professional School Employees Data Sheet

To simplify and facilitate the collection of data required by the Iowa Department of Public Instruction, a new Iowa Professional School Employees

Data Sheet has been developed by the Iowa Educational Information Center. It replaces a form personnel had to fill out year after year, repeating essentially the same information.

The new sheet, used for the first time in the fall of 1965, is updated or completed by each professional educator employed by public schools at the elementary, junior high and senior high levels, as well as county and State Department personnel. Professional employees of area vocational schools and junior colleges also are completing the form for the first time.

The data collected include county, district, school and Social Security numbers, marital status, date of birth, years of experience, contract period, salary, extra compensation, occupation previous year, total semester hours of credit, undergraduate majors, graduate majors, assignments, and highest degree held.

These data, along with staff data collected through CardPac, serve as the basic file of staff data. The basic file will serve several operating functions of the State Department, providing information for the Educational Directory and staff data for reports to the U. S. Office of Education.

VIII. ANALYSES AND CONCLUSIONS

The three objectives of the information project as listed in the grant proposal will be presented in this section, followed by accomplishments in the various areas, and conclusions.

First Objective

A. One objective was to develop instruments for collecting information about all aspects of the educational program for a large population of schools, including information about individual pupils, school personnel, schools, and school districts.

1. Individual Pupils. The data cards (Figures 3-7, 16, 18, and 21) were developed as the primary collection instruments, enabling the Information Center to identify 227,079 public secondary school pupils in 695 schools during the statewide May, 1965, administration. Only 6,110 pupils in 24 schools were not identified, primarily because their schools closed too early to administer the program, or the completed cards were returned to IEIC too late for processing. These figures underscore the feasibility of a statewide information system, giving reassurance to the Center's decision to shift from a sampling to a statewide system.

   A definite asset in producing this excellent statewide response was the legal support of the State Department of Public Instruction, which told the schools that the information system was mandatory since it replaced certain procedures and forms for reporting to the State Department. Once the cooperation of the schools was assured, it was a matter of communicating clearly and effectively with the schools regarding materials and procedures. To improve this crucial aspect of the project in moving from the first administration to the second administration, certain procedures were simplified and certain instructions clarified for local school people. The file maintenance system adopted at the start of the second administration proved unwieldy and difficult to interpret for some administrators; thus, changes to simplify this phase of the system are planned.

   Individual pupil information collected was extensive and included the following: Pupil identification number, name, grade level, CardPac room, sex, school number, district number, county code, name of parent or guardian, pupil birth date, house number, street, city, home telephone number, questionnaire responses, name and number of each course, the course marks, enrollment-withdrawal changes, classification of regular or special education pupil, attendance data, and mark-point average.

The individual pupil information is updated each school year and fed back to the schools in various forms (Pages 114, 115). The cumulative Student Data Summary Sheet (Page 90) was delivered to the schools prior to the start of the Fall, 1965, administration of CardPac for use in improving the individualization of instruction and guidance. The summarized and analyzed questionnaire responses also are fed back to the schools each year, giving them information for educational decision-making. Studied over a period of years, these responses could prove invaluable in enabling the administrator to improve his educational and school-related programs. The questionnaire feedback is a descriptive analysis of a particular school's student body and shows distributions of various measures, characteristics, and traits of pupils in relation to similar distributions for the State as a whole.

2. School Personnel. The teacher's name, course number, course title, room number, I.D. number, and county, district, and school numbers are collected on the CardPac Course Header Card (Page 46) and CardPac Teacher Header Card (Page 47). The program is structured so that each teacher can be tied to the proper courses and the pupils enrolled in those courses. Through the Iowa Professional School Employees Data Sheet described on Page 195, additional staff information is placed in the data bank: Social Security number, sex, birth date, years experience in the present district and total years experience, contract period, percent of time, salary in whole dollars, extra compensation, occupation previous year, declared majors (undergraduate and graduate), number of years work experience in area being taught (for vocational education personnel), assignments, semester hours in each, and highest degree held.

   Teachers and administrators also supplied information about non-classroom assignments on a Staff Assignment Card (Page 145). This card brings in information concerning the title of the staff member, hours per week and weeks per year performing this assignment, the number of pupils involved, the "area of responsibility" based on functional service areas of the district (administration, instruction, attendance and school social work, health services, pupil transportation service, food services, and "other," e.g., student body activities, community services, acquisition or improvement of fixed assets), nature of the primary activities involved in the assignment being described, scope or level of the responsibilities of the assignment, subject area (art, athletics, business education, communications, dramatics, foreign language, health, industrial arts, math, music, physical education, science, social studies, trade and industrial education, vocational education, general agriculture, general homemaking, vocational agriculture, vocational homemaking, vocational business, special education, technical education).

The variety of staff information collected--including both classroom and non-classroom assignments--gives the file a broad base.

3. Curriculum. Course information is brought in on the Master Course List (Pages 35 and 36), tied to the pupils through the Course Card (Page 46), and tied to the teachers through the Course Header Card (Page 46) and Teacher Header Card (Page 47). The Master Course List describes course titles, number of sections, minutes taught per week, weeks taught per year, number of units, credit or non-credit, required or elective, vocational or non-vocational. Academic marks also are collected for each course on the Mark Report Form shown in Figure 14A on Page 115.

Plans for the collection of facilities and finance data were in the developmental stage during the period covered by this report. Proposed plans are described on Page 171. The ultimate goal is to incorporate both tracks into the information system, making the total information project capable of producing information on five all-encompassing educational tracks: (1) Pupils, (2) staff, (3) courses, (4) facilities, and (5) finances.

Section VII beginning on Page 171 also describes other information projects undertaken by the Iowa Educational Information Center: Elementary Pupil Inventory System, Computer Scheduling, Attendance and Mark Reporting, Student Ranking, Touch-Tone Data Transmission, Census, Educational Data Bank, Head Start Identification, and Vocational Education.

As part of its information services, the Iowa Educational Information Center serves as a clearinghouse of information from which external agencies of all kinds, including national agencies, may secure information without approaching or inconveniencing individual schools. The schools already are being spared certain reporting chores as individuals and agencies become aware of the existence of information stored in this central location, and as the data bank becomes broader and its existence more publicized, the individual schools should receive far fewer requests for information.

The collected educational data proved to be of immediate value for research purposes as college students and educators were told of the clearinghouse. University of Iowa faculty members from a variety of fields have used the data bank for projects, and the bank has proved a helpful tool for students working toward advanced degrees. As the bank grows, broader participation by all elements of the faculty is expected.

Among the published reports acknowledging the use of CardPac data are "A Comparison of Selected Educational, Socio-Economic, and Attitudinal Characteristics of Seniors in Two Groups of Iowa School Districts" by Dr. Francis R. Dunn of the IEIC staff, and "The Relationships of ITED Composite Score to the Expectations, Aspirations, Activities, and Sociological Characteristics of Iowa High School Students," by Professor Leonard S. Feldt, Director of Iowa Tests of Educational Development at The University of Iowa, and Robert A. Forsyth, an instructor. Both are listed in the bibliography.

Second Objective

B. The second objective of the information project was to develop computer programs and data-processing techniques and systems for transcribing, integrating, and storing this information centrally for purposes of research and service.

Because of the statewide nature of the program, it was necessary to develop electronically scannable data-collection cards which could be completed quickly at the local school level, then processed rapidly by the Measurement Research Center. The cards are read by an optical scanner which can handle up to 30,000 documents per hour, and the information integrated and stored on magnetic tape. Computer programs and procedures were developed for merging the information into comprehensive individual pupil, teacher, and school records and for organizing and storing this information electronically in a form for most convenient access for purposes of educational research and service.

IEIC has developed three information files--staff data, curricula and pupils. Data in any file can be related to data in each of the other files.

Data retrieval falls into two classifications--standard retrieval or special retrieval. Standard retrieval is performed through the use of standard programs in which the user defines the parameters necessary to control selection and output of data. Special retrieval is that which cannot be performed with the standard program and thus requires special programming effort for each request.

A Data Bank User's Manual (see bibliography) lists each item of data on file and the codes and related definitions associated with the individual item. The Manual also contains instructions to the user on the necessary procedures for retrieving information, and policy regarding use of the data.

Project TUHL

A two-pronged approach to the problem of automated education information retrieval--Project TUHL and a retrieval language--is being developed by a staff associate, Richard A. Kaimann. The approach concerns the design and file organization of a mass data system (Project TUHL) and a language methodology for retrieval from that file.[1]

Those in the computer field are familiar with acronyms in which the first letter or letters of successive parts of compound terms form a word. In this case, TUHL is not an acronym; rather, it takes its letters at random from within the words students, teachers, schools, and curriculum. This was done purposely to describe the characteristics of the system itself which involves random access.

The problems of information retrieval revolve about the difficulty in getting information from a file once it has been placed there. For instance, it is not too difficult to discover what data are to be stored for a given purpose, design a means of gathering them, and then put them on computer magnetic tape. The difficulty arises in trying to retrieve something from that file. The problem is one of searching through a series of tape files until the desired item is found and then searching another file for some additional data that are referenced in the first file. While not particularly difficult to do physically, it is time consuming and expensive.

The key to resolving this retrieval problem lies in designing an information file in which each item is appropriately related in a horizontal (backward and forward) manner through chaining techniques and in a vertical manner through explosion and implosion. Chaining, within a given level of the data hierarchy, means any item can be thought of in terms of a link in a chain and can refer to a single preceding link and a single succeeding link and hence accomplishes a complete tie of everything at that level. The data need not be in any particular sequence. Explosion refers to the downward movement through the hierarchy and implosion refers to the upward movement through the hierarchy.

These techniques will make it possible to answer any questions about any item in any combination at any time for those data that are in the data file. Furthermore, since the designers are not aware of what requests might be received, it is necessary to provide the ability to get at any item quickly in any combination and in any sequence. The major purpose then of Project TUHL is to present a file design proposal that completely integrates the information for an educational data bank.

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[1] Kaimann, Richard A., and McCaffrey, Kenneth J., "A Two-Pronged Approach to Information Retrieval," Monitor, Vol. IV, No. 8, April, 1966, pp. 10-11.

The TUHL data bank concept is designed for implementation with random or direct access equipment. The methodology seeks to present all the systems aspects of the skeleton records to allow complete access to any combination of educational data that are on the file. Incorporated in the system are randomizing concepts, packing concepts, and chaining concepts as applied to these educational data.

Project TUHL is designed with the object in mind of maintaining the entire student, curriculum, facilities, and teacher information for the State of Iowa in a central file. However, it is applicable as is on an individual school basis or as a university information system.

This proposal has been delimited and restricted to a skeleton of the file organization. By this it is meant that little consideration is given to the content of the information within the descriptive fields. These will be left for the educational specifications personnel to decide. What has been done is the construction of the random and direct access ties that fully integrate the information retrieval file.

The Project TUHL file design concept revolves about four basic records: (1) The students, (2) the courses, (3) the teachers, and (4) the facilities. Any specific record can be retrieved by randomizing techniques. Any related information can be retrieved by direct access techniques with the record ties provided in the skeleton record. Complete integration is a reality.

The dual problem associated with large-scale automated information systems concerns the actual retrieval of information from that file. To alleviate this problem, IEIC personnel are considering development of a language for use with the Project TUHL file concept. The language will provide the ability to write retrieval requests quickly and easily by persons with a minimum of computer background.

Third Objective

C. The third objective of the information project was to develop computer programming and data-processing systems for selecting from the file, reducing, organizing, and disseminating the educational information needed by schools and other agencies to perform their basic functions more effectively.

Following are the procedures involved in producing the three major feedback reports for local schools:

1. Item Analysis of Questionnaire Responses. Data collected and stored in the pupil file are processed by the IBM 1401 Computer, integrated with the questionnaire responses, and a response file created. Then the response file is summarized by the IBM 7044 Computer. From this the 1401 prints the State and local analyses.

2. Frequency Distributions of Relationships Between Selected Items. Data collected and stored in the pupil file are processed by the 1401, integrated with the questionnaire responses, and then the 7044 summarizes the relationships among the responses, mark-point averages, and Iowa Testing Program composite scores. A relationship file is then created and from this the 1401 prints the State and local frequency distributions.

3. Student Data Summary Sheet. Information in the pupil data file are processed by the 1401 to create a basic pupil information file from which the 7044 sorts data by name, grade level, and school. The sorted basic pupil information is then printed by the 1401 to produce the 9-part Student Data Summary Sheet.

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IX. FINANCIAL REPORT, COST ANALYSIS

The CardPac System of Educational Accounting was administered twice during the 18-month period covered by this report and the following production figures represent combined costs for the two administrations. The initial administration in May, 1965, and the fall, 1965, administration obviously differ in many respects; however, because of time element involved, much of the material purchased was done so in quantity to cover both administrations. Also, much of the processing overlapped.

Combined processing figures for the two administrations:

Scoring, 120 hours at $60 per hour, total $7,200.
1401 Computer Time, 719.5 hours at $41.50 per hour, total $29,859.
7044 Computer Time, 166 hours at $160 per hour, total $26,560.
Programming and Systems Work, 5751 hours at $4.25 per hour, total $24,441.
Keypunching and Verifying, 2251 hours at $4 per hour, total $9,004.
Clerical Labor, 3494 hours at $3.50 per hour, total $12,229.
Unit Record Sorting (083 card sorter), 87 hours at $5 per hour, total $435.
Unit Record Collating (087 collator), 255.5 hours at $6 per hour, total $1,533.
Unit Record Reproduction (519 reproducer), 63.7 hours at $5 per hour, total $318.
Unit Record Interpreter (557 interpreter), 89.2 hours at $6 per hour, total $535.
Systems Development (primarily development of manuals), 2009 hours at $6 per hour, total $12,018.
The total processing cost was $124,132.

The data cards used in the spring and fall administrations cost $1.84 per thousand; these were purchased in quantities of both millions and hundreds of thousands, depending on the card. There was also a $135 electroplate charge for each type of card, a $60 setup charge, and $40 for artwork.

U. S. Office funds were used for other information system activities in addition to the CardPac System; also, Ford Foundation and State Department of Public Instruction funds were used in helping develop and administer the CardPac System.

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X. SUPPORTING FACILITIES

The Iowa Educational Information Center has available several supporting facilities which provide a unique and comprehensive basis for a total information system: Measurement Research Center, the University of Iowa Computer Center, the Iowa Testing Programs, the College of Education, and the State Department of Public Instruction.

Measurement Research Center

Measurement Research Center (MRC) evolved in response to a demonstrated need. Over a decade ago it became apparent that existing methods of scoring were antiquated for the widening use of standardized tests and rising school enrollments. Manual processing was inaccurate and wasteful of teacher time. Just to score by hand 35 multi-test answer sheets typically required 10 to 20 minutes of teacher time, and then the total processing job was only begun. How many errors were made in the process is difficult to estimate. The few mechanical scoring devices in existence were also inaccurate, slow, and too inefficient for large-volume usage. Reliable, high-speed equipment was badly needed, but none existed until the first electronic scorer was designed and constructed at The University of Iowa in Iowa City (1952-55).

The success of this prototype led to the establishment of Measurement Research Center. MRC's purpose is to conserve human resources by developing automatic devices for test scoring and data processing, and by providing such services to schools and agencies at reasonable cost. A professional organization, MRC is governed by a Board of Trustees who are key administrative officials of The University of Iowa. Under its charter as a not-for-profit corporation, any excess of income over operating expenses and reserve requirements must be spent only on educational research at The University of Iowa.

Maintaining its early position of leadership, MRC has grown rapidly into a large and versatile service center, occupying two locations in Iowa City--a new data-processing building and a separate engineering research and development building.

The corporation serves test users everywhere, through the medium of the major test publishers and the sponsors of State, regional, and national testing programs such as American College Testing Program. MRC is the data-processing agency for the Iowa Educational Information Center.

Most of the documents processed by MRC are unique forms, designed for the MRC electronic scanners. They are mainly test answer sheets or cards, but an increasing proportion are questionnaires, application blanks, and a wide variety of other data-collection forms.

Answers or other data are recorded on the forms by marking circles or ovals with ordinary soft lead pencil. Almost any information that can be expressed by alphabetic, numeric, or position code can be recorded on an MRC sheet. The MRC scanners "read" the information on these documents and transcribe it directly to magnetic tape. The tapes are then run through computers, which convert the raw scores to derived scores and perform a great variety of computational operations. Various types of reports to schools and agencies are produced as the output of the operation.

MRC has five computers--an IBM 1401 with 8,000 positions of storage, an IBM 1460 with 8,000 positions of storage, 2 CDC 160's and 1 CDC 160A.

The MRC Mod 9 document scanner reads 30,000 documents per hour, the MRC 801 high-speed card mark scanner reads 400 cards per minute, the MRC Mod 5 scanner handles 7,500 documents per hour, and the Mod 6 also handles 7,500 documents per hour.

In addition, the services of MRC's more than 100 specialists and technicians in developing systems, procedures, and computer programs are available to the Iowa Educational Information Center.

Computer Center

The Computer Center's big machine is the IBM 7044 Computer which has 32,000 words of memory. Other Computer Center hardware are the IBM 360/30 and 1401. The 7044 was used to produce the two large CardPac feedback reports--the Item Analysis and the Frequency Distributions of Responses. Iowa Testing Programs material also is produced on the 7044.

State Department of Public Instruction

The State Department of Public Instruction provides personnel and access to its facilities as well as financial support for IEIC. The Department has traditionally enjoyed unusually good relationships with the public schools of the State, and its support of the data-collection activities ensures that the plan as a whole will be an integral part of the legally constituted educational structure of the State.

Iowa Testing Programs

The Iowa Testing Programs are five-to-seven-hour comprehensive Iowa Tests of Basic Skills and the Iowa Tests of Educational Development. Both are non-profit, cooperative projects of The University of Iowa. They are administered annually under closely controlled conditions to almost the entire school population of the State in grades 3 to 12. The Iowa Testing Programs information is made available to the Information Center without imposing any additional reporting burden on the schools.

The test battery for ITED, administered in grades 9-12, comprises, in a single booklet, nine comprehensive examinations, measuring: Understanding of basic social concepts, general background in the natural sciences, correctness and appropriateness of expression, quantitative thinking, interpretation of reading materials in the social studies and natural sciences, interpretation of literary materials, general vocabulary, and use of sources of information.

The major purposes of ITED are:

1. To provide high school teachers and counselors with dependable measures of the general educational growth and development of each pupil in order that instruction and guidance may thereby be better adapted to individual pupil needs.

2. To provide the school administrator with a dependable basis for evaluating his school's educational offering in seven major areas.

A unique feature of this program is that it permits systematic assessment of the growth as well as the status of each pupil and class. The evaluation of growth--progress toward a number of important ultimate objectives of the entire instructional program--is made possible through the successive administration, year after year, of comparable forms of the same tests to all pupils.

These tests are designed to measure as directly as possible the pupil's ability in the areas named previously, without regard to the content and organization of the present high school curriculum. The tests, furthermore, are administered at the beginning rather than the end of the school year. Accordingly, the major emphasis is placed on assessing the needs of pupils and classes and on planning the most beneficial instructional program. The use of the data to measure the effectiveness of past instruction in specific school subjects or to evaluate the work of any one teacher is discouraged. The teacher need not be concerned about obtaining higher average scores for his own sake and may devote his attention more fully to the curricular and guidance implications of the scores.

The Iowa Tests of Basic Skills are administered to pupils in grades 3-9. The primary purpose of the program is to reveal how well each pupil has mastered the basic skills. This information will enable the teacher better to adapt instruction and guidance to the pupil's needs, interests, and abilities.

In addition the program provides the school administrator with an objective, dependable basis for evaluating the total educational offering of his school. In some instances the test results may point the need for adjustments in the curriculum or for shifts in emphasis among educational objectives.

The Iowa Tests of Basic Skills are concerned exclusively with the basic skills or habits acquired in the elementary school in vocabulary, reading, the mechanics of correct writing, methods of study, and arithmetic. The content of each test has been very carefully selected to reflect the best of current curriculum practices.

All tests for all grades are contained in a single 96-page booklet. Each grade takes only designated portions of the booklet, appropriate in content and difficulty to the grade level. The time limits and directions are the same for all grades. Hence, any number of grades may be tested simultaneously.

The battery is organized as follows with the figures in parentheses indicating working time:

Test V: Vocabulary (17 minutes).

Test R: Reading comprehension (55 minutes).

Test L: Language skills (67 minutes).

- L1: Spelling
- L2: Capitalization
- L3: Punctuation
- L4: Usage

Test W: Work-study skills (80 minutes).

- W1: Map reading
- W2: Reading graphs and tables
- W3: Knowledge and use of reference materials

Test A: Arithmetic skills (60 minutes).

- A1: Arithmetic concepts
- A2: Arithmetic problem solving

Under the current plan, schools participating in the ITBS program do not merely buy test materials. They subscribe, on a per-pupil basis, to a continuing professional service. The following items constitute the standard service:

1. The loan of the test booklet and a separate answer sheet for each pupil, and provision of all necessary manuals of directions.

2. Highly accurate machine scoring of all answer sheets.

3. The computation of 15 grade-equivalent scores for each pupil: 11 test scores, 3 area scores (language, work-study, and arithmetic), and a composite score on the entire battery.

4. The computation of 15 percentile ranks for each pupil based on up-to-date norms for the State of Iowa.

5. A printed list report, in triplicate, for each grade in each building, giving each pupil's name, his grade-equivalent scores and the percentile ranks of these scores, for all tests and totals. Also printed at the end of the list report are class averages of grade-equivalent scores.

6. Frequency distributions of grade-equivalent scores for each grade in each building, and for each grade in the system as a whole. Also, local building and system percentile norms.

7. A confidential report of the 15 average scores and corresponding percentile ranks made by each grade in each building and in the system as a whole. This report enables the school administrator to compare local results with those of other Iowa schools.

8. A pupil profile chart for each child, designed to serve as a permanent cumulative record of the pupil's test results over a 7-year period.

9. A take-home, self-interpreting profile for each pupil. This leaflet gives to the parents concrete evidence of attention to fundamentals.

10. Other special materials designed to assist administrators, supervisors, and teachers in the interpretation and use of the test results.

The complete cost of the standard service just described is 35 cents ($.35) per pupil tested, plus all transportation charges. This low cost is made possible only by restricting the offering to a single standard schedule of services, which permits the economies of large-scale "assembly-line" methods in processing. Another contributing factor is the cooperation of the schools in experimental test tryouts and in the scaling and standardization of the tests.

This program was devised for the public schools of Iowa, but private and parochial schools also are invited to participate.

All participants agree, to their mutual gain:

1. To administer the tests within the announced dates of the program and under the uniform conditions described in the manuals of directions.

2. To test every pupil regularly enrolled in each grade tested.

3. To administer a 20-minute "experimental unit" to all pupils if requested.

4. To return all tests promptly to Iowa City.

College of Education

The College of Education of The University of Iowa provides professional personnel and office space for the Iowa Educational Information Center, and members of the faculty contribute professional assistance in specifying kinds of information to be collected.

APPENDIX A

Student Questionnaire

Iowa CardPac System of Educational Accounting

STUDENT QUESTIONNAIRE

IOWA EDUCATIONAL INFORMATION CENTER
The University of Iowa
Iowa City, Iowa

Instructions for Completing the Student Questionnaire

This questionnaire is made up of two parts. Part I contains questions which are to be answered by all of the students. Part II contains questions which are to be answered only by students in grade 12. Read each question carefully and completely before attempting to answer it. Select the best answer from among those given with each question which is true or most nearly true for you. This is not a test. The correct answer is the one you choose.

Read the following two sample questions:

Sample 0. How old are you?

A1	10	B1	15
A2	11	B2	16
A3	12	B3	17
A4	13	B4	18
A5	14	B5	19

Sample 00. How tall are you?

A1	4'11" or shorter
A2	5'0" - 5'5"
A3	5'6" - 5'11"
A4	6'0" - 6'2"
A5	6'3" or taller

These are samples of the kinds of questions you will be asked to answer, Both sample items give you a choice of answers to choose from, each one of which is "numbered" with both a capital letter and a numeral. If you were or are 18, you would answer sample 0 as shown on the answer card by marking over both the B and the 4. Remember, for this type of question, you have to make 2 marks to answer it correctly on the answer card. With your pencil mark both the letter and the numeral as shown on the answer card.

Look at sample 00. As in the previous item, you need to make 2 marks. If you are 6'0" tall you would mark over both the A and the 4 as shown on the answer card. Be sure of what you are doing when marking your answers on the card. Make the 2 marks for each question. Remember, select the one best answer for each question from among those given.

If you have any questions, raise your hand.

PART I - FOR GRADES 7 - 12

1. What is the total number of living children in your family? Include yourself, together with all full brothers and sisters, half-brothers and sisters, stepbrothers and sisters, and foster brothers and sisters. Include those not now living in your home.

A1 One
A2 Two
A3 Three
A4 Four
A5 Five
B1 Six
B2 Seven
B3 Eight
B4 Nine
B5 Ten
C1 Eleven
C2 Twelve or more

2. How many male children in your family are older than you? (Include brothers, half-brothers, foster brothers, step-brothers)

A1 None
A2 One
A3 Two
A4 Three
A5 Four
B1 Five
B2 Six
B3 Seven
B4 Eight
B5 Nine
C1 Ten
C2 Eleven or more

3. How many female children in your family are older than you? (Include sisters, half-sisters, foster sisters, step sisters)

A1 None
A2 One
A3 Two
A4 Three
A5 Four
B1 Five
B2 Six
B3 Seven
B4 Eight
B5 Nine
C1 Ten
C2 Eleven or more

4. Which one of the following statements best describes your parents?

A1 They are married and living together.
A2 They are married but not living together.
A3 They are divorced.
A4 My father is not living.
A5 My mother is not living.
B1 Neither of my parents is living.

5. With whom are you now living, that is, who are the heads of the house in which you live?

A1 Mother and father.
A2 Mother only.
A3 Father only.
A4 Sometimes with my mother, sometimes with my father.
A5 Mother and stepfather.
B1 Father and stepmother.
B2 Grandparents, aunt, uncle, or cousins.
B3 Brother or sister.
B4 Foster parents (not relatives).
B5 None of the above.

6. Which one of the following statements best describes your father's occupation? If your father is not living, or if he is retired, what was his occupation?

NOTE: You may not find the exact occupation you are looking for, but try to select a category that is most like your father's occupation.

A1 Farm owner, manager, and/or renter.
A2 Farm foreman.
A3 Farm worker.
A4 Workman or laborer--such as janitor, railroad worker, construction worker, fisherman, filling station attendant.
A5 Private household worker--such as a servant, butler.
B1 Protective worker--such as a policeman, detective, sheriff, fireman.
B2 Service worker--such as barber, beautician, waiter, mail carrier.
B3 Semi-skilled worker--such as factory machine operator, bus or truck driver, meat cutter.
B4 Skilled worker or foreman--such as a baker, carpenter, electrician, mechanic, plumber, plasterer, tailor, foreman in a factory or mine.
B5 Clerical worker--such as bank teller, bookkeeper, sales clerk, office clerk, messenger.
C1 Salesman--such as real estate or insurance salesman, factory representative.
C2 Manager--such as sales manager, store manager, office manager, business manager, factory supervisor.
C3 Official--such as manufacturer, officer in a large company, banker, government official or inspector.
C4 Proprietor or owner--such as owner of a small business, wholesaler, retailer, contractor, restaurant owner.
C5 Professional--such as actor, accountant, artist, clergyman (minister), dentist, engineer, lawyer, librarian, scientist, teacher, career military officer.

D1 Technical--such as draftsman, surveyor, medical or dental technician.
D2 Military service, non-officer.
D3 Unemployed.
D4 I don't know.

7. Which one of the following best describes your mother's work, at present?

A1 Housewife only.
A2 Housewife, and works 10 hours or less per week for which she is paid.
A3 Housewife, and works between 10 and 20 hours a week for pay.
A4 Housewife, and works between 20 and 30 hours a week for pay.
A5 Works 30 to 40 hours a week for pay.
B1 Works 40 hours or more for pay.
B2 I can't answer this question.

8. Which one of the following statements best describes your mother's occupation? If your mother is not living, what was her occupation.

NOTE: You may not find the exact occupation you are looking for, but try to select a category that is most like your mother's occupation.

A1 Housewife only.
A2 Farm owner or manager.
A3 Worker or laborer--such as lady janitor, laundry worker, baby sitter.
A4 Private household worker--such as housekeeper, maid, laundress.
A5 Protective worker--such as policewoman, private detective.
B1 Service worker--such as beautician, waitress, nurses aide.
B2 Semi-skilled worker--such as factory machine operator, assembly line inspector, short-order cook.
B3 Skilled worker or forewoman--such as baker, chef, seamstress, practical nurse.
B4 Clerical worker--such as bookkeeper, secretary, typist, sales clerk, store clerk.
B5 Sales--such as real estate, life insurance.
C1 Manager--such as sales manager, store manager, office manager, business manager, factory supervisor.
C2 Official--such as manufacturer, officer in a large company, banker, government official or inspector.
C3 Proprietor or owner--such as owner of a small business, wholesaler, retailer, restaurant owner.

C4 Professional--such as accountant, artist, dentist, registered nurse, physician, engineer, lawyer, librarian, scientist, teacher.
C5 Technical--such as draftsman, medical or dental technician.
D1 I don't know.

9. Which one of the following statements best describes the HIGHEST level of education which your father has attained. If your father is not living, what was the highest level he attained?

A1 No formal schooling.
A2 Some elementary school.
A3 Completed elementary school.
A4 Some high school.
A5 Graduated from high school.
B1 Some business, trade, or technical school.
B2 Graduated from business, trade, or technical school.
B3 Some college (but less than 4 years).
B4 Received the Bachelor's Degree (B.A., B.S., etc.) (4 years or more).
B5 Received the Master's Degree (M.A., M.S., etc.) (5 years or more).
C1 Received the Doctor's Degree (Ph.D., M.D., D.D.S., etc.) (6 years or more).
C2 I do not know.

10. Which one of the following statements best describes the HIGHEST level of education which your mother has attained? If your mother is not living, what was the highest level she attained?

A1 No formal schooling.
A2 Some elementary school.
A3 Completed elementary school.
A4 Some high school.
A5 Graduated from high school.
B1 Some business, trade or technical school.
B2 Graduated from business, trade or technical school.
B3 Some college (less than 2 years).
B4 Some college (2 years but less than 4) (enough to get a teaching certificate, for example).
B5 Received the Bachelor's Degree (B.A., B.S., etc.) (usually 4 years of college).
C1 Received the Master's Degree (M.A., M.S., etc.) (usually 5 or 6 years of college).
C2 Received the Doctor's Degree (Ph.D., M.D., D.D.S., etc.) (usually 7 or more years of college).
C3 I do not know.

11. How far do you live from school?

A1 1/4 mile or less (3 blocks or less)
A2 1/4 to 1/2 mile (3 to 6 blocks)
A3 1/2 to 3/4 mile (6 to 9 blocks)
A4 3/4 to 1 mile (9 to 12 blocks)
A5 1 to 2 miles

B1 2 to 5 miles
B2 5 to 7 miles
B3 7 to 10 miles
B4 10 to 15 miles
B5 15 to 20 miles

C1 More than 20 miles

12. How do you usually travel to school?

A1 Walk
A2 Bicycle
A3 City bus
A4 School bus
A5 Family car

B1 My own car
B2 Neighbor's car (not a particularly close friend)
B3 A close friend's car

13. On the average, during the school year, how many hours a week do you work for which you are paid? (Do not count allowance, food and clothing.)

A1 None
A2 1 - 5
A3 6 - 10
A4 11 - 15
A5 16 - 20

B1 21 or more

14. On the average, during the school year (not counting summer vacation) how many hours per week do you work for which you are not paid?

A1 None
A2 1 - 5
A3 6 - 10
A4 11 - 15
A5 16 - 20

B1 21 or more

15. Choose the response which best describes your physical health:

A1 No physical handicaps or restrictions
A2 Loss of, or restricted use of arm or leg
A3 Deafness in at least one ear or need for a hearing aid
A4 Blindness in at least one eye
A5 Asthma, diabetes or other permanent ailment (rheumatic fever, epilepsy, congenital heart condition, cerebral palsy, etc.)

16. On the average, how many hours each week do you spend doing homework outside of school.

A1 None
A2 1 - 4
A3 5 - 9
A4 10 - 14
A5 15 or more

17. Which one of the following statements best describes your attitude toward school work?

A1 I do the very best I can in all courses.
A2 I do the best I can in some courses; in others I do just enough to get by.
A3 I usually do only enough to get along in each course.
A4 Frankly, I just don't care how well I do in any of the courses.

In your school, how active have you been in each of the following groups of activities this school year? Mark your answers to questions 18-27 as follows:

A1 Very active (hold offices, help organize, attend most meetings, etc.)
A2 Fairly active (attend nearly all meetings, interested in holding office, etc.)
A3 Participated little (attended some meetings only)
A4 Did not participate
A5 We do not have this group or activity in my school.
B1 We have this activity, but students in this grade can not participate.

18. Athletics (include intramurals also) (Do not include required physical education or gym classes)

19. Speech and dramatics (plays, debates, etc.)

20. Music (band, orchestra, choir, glee club, etc.)

21. Publications (yearbook, school newspaper, etc.)

22. Student government (student council)

23. Service clubs (Junior Chamber of Commerce, Y-Teens, FFA and FHA, Key Club, etc.)

24. Honor societies (Do not include honor rolls)

25. Academic clubs (Latin, Science, Math., etc.)

26. Hobby clubs or activities (photography, chess, etc.)

27. Social activities (school dances, school parties, etc.)

28. Which of the following best describes your feeling about school this year?

A1 I like school very much.
A2 School is enjoyable most of the time.
A3 I don't particularly like or dislike school.
A4 I would rather not go to school if I had a choice.
A5 I dislike school and will leave it as soon as I can.

29. In describing my feeling about teachers I would say the one best description is that:

A1 Most teachers have treated me fairly and friendly.
A2 Most teachers are fair but unconcerned about me personally.
A3 A few teachers are fair but most are unconcerned about me.
A4 Some teachers dislike me and give me a "hard time."
A5 Nearly all the teachers are against me.

30. Do you think teachers like giving you individual help with your school work when you ask them?

A1 Yes
A2 No

31. Do you think your parents take an interest in your schoolwork?

A1 Yes
A2 No
A3 I have no parents.

32. If or when you have children of your own you would:

A1 Insist they do their best in school and continue in school as long as possible.
A2 Encourage going to school as long as they wanted.
A3 Leave their schoolwork and plans strictly up to them.
A4 Discourage them from going to school.

33. How many unpleasant experiences have you had with other students in the school?

A1 A great many
A2 Quite a few
A3 Not very many
A4 Very few
A5 None

34. Which one of the following statements best describes your general attitude toward studying?

A1 I really like it.
A2 I like it most of the time.
A3 Can't say I like or dislike it.
A4 I dislike it most of the time.
A5 I dislike it very much.

35. This year do you feel you have received enough credit (recognition) from your teachers for your work in school?

A1 Never
A2 Almost never
A3 Usually
A4 Always

36. How do your teachers view you?

A1 As a top student
A2 A good student
A3 An average student
A4 A below average student
A5 A very poor student

37. Next year if you are in school (or college) you will probably:

A1 Get very low grades (probably fail a subject or two).
A2 Get below average grades (below "C" average but passing in all).
A3 Get average grades.
A4 Get somewhat above average grades (mostly "B's").
A5 Get quite high grades (nearly all "A's").

38. When you get a job you will probably:

A1 Be extremely skilled at it.
A2 Be a good worker but not perfect.
A3 Be a fair worker.
A4 Be a poor worker, but willing to try.
A5 Have a hard time holding the job unless I get some "breaks."

Use the following list to answer questions 39 and 40. Read both questions 39 and 40 before answering either.

A1 Something less than high school graduation.
A2 High school graduation.

A3 Work for a company which will train me on the job or send me to school.
A4 Enter the military service and go to school there.
A5 Attend a technical, trade or business school which requires less than two years to complete.
B1 Attend a technical, trade or business school which requires more than two years to complete.
B2 Attend some college but not graduate.
B3 Complete a junior college program.
B4 College graduation (Bachelor's Degree).
B5 Something beyond a Bachelor's Degree such as a degree in law, medicine, dentistry or an M.A. or Ph. D.

39. If it were left to your choice, and you could afford it, which one of the preceding statements best describes the highest level of education you would try to attain?

40. Realistically, considering your abilities, your financial resources, family problems, etc., what is the highest level of education you expect to attain?

If you are a boy, answer questions 41 and 42 using the choices listed below:

If you are a girl, skip these questions and go to question 43.

NOTE: You may not fine the exact occupation you are looking for, but try to select a category that is most like the choice you would make.

A1 I can't say at this time.
A2 Farm owner and/or manager
A3 Farm foreman
A4 Farm worker
A5 Workman or laborer--such as factory or construction worker, fisherman, filling station attendant, janitor
B1 Private household worker--such as a servant, butler, etc.
B2 Protective worker--such as policeman, detective, sheriff, fireman.
B3 Service worker--such as barber, beautician, waiter, mail carrier.
B4 Semi-skilled worker--such as factory machine operator, truck driver, meat cutter.

B5 Skilled worker or foreman--such as a baker, carpenter, electrician, mechanic, plumber, plasterer, tailor, foreman in a factory or mine (but not on a farm).
C1 Clerical worker--such as a bank teller, bookkeeper, sales clerk, office clerk, messenger.
C2 Salesman--such as real estate or insurance salesman, factory representative, etc.
C3 Manager--such as sales manager, store manager, office manager, business manager, factory supervisor
C4 Official--such as manufacturer, officer in a large company, banker, government official or inspector.
C5 Proprietor or owner--such as owner of a small business, wholesaler, retailer, contractor, restaurant owner.
D1 Professional--such as actor, accountant, artist, clergyman, dentist, engineer, lawyer, librarian, scientist, teacher, military officer.
D2 Technical--such as draftsman, surveyor, medical or dental technician, etc.
D3 Military service--non-officer.

41. Which one of the above statements best describes the type of occupation which you would most like to follow most of your life?

42. Considering the opportunities you are likely to have and the education you are likely to get, which one of the above statements best describes the type of occupation which you really expect to be in for most of your life?

If you are a girl, answer questions 43 and 44 using the choices listed on the next page:

If you are a boy, skip these questions and go to question 46.

NOTE: You may not find the exact occupation you are looking for, but try to select a category that is most like the choice you would make.

A1 I can't say at this time.
A2 Housewife, at least the majority of the time.
A3 Farm owner and/or manager.
A4 Worker or laborer--such as lady janitor, baby sitter, laundry worker.
A5 Private household worker--such as housekeeper, maid, laundress, etc.
B1 Protective worker--such as policewoman, private detective.
B2 Service worker--such as airline hostess, beautician, waitress.
B3 Semi-skilled worker--such as factory machine operator, assembly inspector.
B4 Skilled worker or forewoman--such as baker, chef, seamstress, practical nurse.
B5 Clerical worker--such as bookkeeper, secretary, typist, sales clerk, store clerk.
C1 Sales--such as real estate, life insurance.
C2 Manager--such as sales manager, store manager, office manager, business manager, factory supervisor.
C3 Official--such as manufacturer, officer in a large company, banker, government official or inspector.
C4 Proprietor or owner--such as owner of a small business, wholesaler, retailer, restaurant owner.
C5 Professional--such as actress, accountant, artist, dentist, registered nurse, physician, engineer, lawyer, librarian, scientist, teacher, military officer.
D1 Technical--such as draftsman, medical or dental technician.
D2 Military service, non-officer.

43. Which one of the above statements best describes the type of occupation which you would most like to follow most of your life?

44. Considering the opportunities you are likely to have and the education you are likely to get, which one of the above statements best describes the type of occupation which you really expect to be in for most of your life?

45. If you are a girl, answer this following item. Boys, skip this item. After you finish your schooling, what do you expect to do in the future?

A1 Have a life-time career other than homemaker.
A2 Be a homemaker (housewife).
A3 Both a life-time career and a homemaker.
A4 Have a career for awhile, then full-time homemaker.
A5 Have a full-time career for awhile, then combine homemaker and career.

NOTE: CHECK TO SEE THAT YOUR PLACE IN THIS QUESTIONNAIRE (BY ITEM NUMBER)CORRESPONDS TO THE PLACE ON YOUR ANSWER CARD.

46. On an average day, how much homework outside of school hours should a student in your grade be required to do?

A1 None
A2 Less than 30 minutes
A3 Between 30 minutes and an hour
A4 Between one hour and two hours
A5 More than two hours

47. How do you feel about the amount of homework most of your teachers assign?

A1 They usually assign too much.
A2 They usually assign about the right amount.
A3 They usually assign too little.

48. Are your parents glad to help you with your homework?

A1 Yes
A2 No
A3 Yes, but often don't know how.
A4 I can't answer this question.

49. Do your parents encourage you to do your homework?

A1 Yes, if I don't do it on my own initiative.
A2 No
A3 I can't answer this question.

50. Do your parents frequently argue with you about getting your homework done?

A1 Yes
A2 No
A3 I can't answer this question.

51. Which of the following statements best describes the way your parents feel about the homework your teachers give you:

A1 They feel the teachers give too much homework.
A2 They feel the teachers give about the right amount of homework.
A3 They feel the teachers give too little homework.
A4 My parents probably don't care one way or the other.
A5 I can't answer this question.

Use this list to answer question 52 and 53.

A1 Mathematics--such as arithmetic, algebra, geometry, and general mathematics.
A2 English--such as reading, speech, literature, rhetoric.
A3 Social Studies--such as geography, history, and civics.
A4 Sciences--such as chemistry, physics, and biology.
A5 Foreign languages--such as French, Spanish, and German.
B1 Industrial arts--homemaking, shop, mechanical drawing.
B2 Music--such as band, chorus.
B3 Art, drawing and crafts.
B4 Physical education
B5 Business education

52. Which of the above groups of subjects do you like the best?

53. Which of the above groups of subjects do you like the least?

54. Why do you like the subject you chose for question 52?

A1 I like the teacher.
A2 I find it interesting and stimulating.
A3 It is an easy subject.
A4 I like the other students in the class.
A5 I will need it in later life.
B1 I am good in this subject.
B2 For some other reason.

55. Why do you dislike the subject you chose for question 53?

A1 I dislike the teacher.
A2 It is hard for me.
A3 It requires too much homework.
A4 I don't like some of the other students in the class.
A5 I can't see how it will ever be of any use to me.
B1 It's boring.
B2 I just don't like it.
B3 For some other reason.

56. Do you have a social security number?

A1 Yes
A2 No
A3 I don't know

57 Do you have a learner's permit to drive a car?

A1 Yes
A2 No

58. Do you have a driver's license? (Do not count a learner's permit)

A1 Yes
A2 No

59. Do you have a car of your own (A car which you actually own or one which is considered yours?

A1 Yes
A2 No

60. Do you drive your parent's car (or a car belonging to another family member) frequently?

A1 Yes
A2 No

61. In an average week, I:

A1 Do not drive to school.
A2 Drive to school once.
A3 Drive to school twice.
A4 Drive to school three times.
A5 Drive to school four times.
B1 Drive to school five or more times.

Indicate the average amount of time spent in each of the activities of questions 62 to 65 and use the following choices:

A1 Less than 1 hour per week
A2 1 to 3 hours per week
A3 4 to 6 hours per week
A4 7 to 9 hours per week
A5 10 to 12 hours per week
B1 13 to 15 hours per week
B2 16 to 20 hours per week
B3 More than 20 hours per week

62. How many hours per week do you watch television?

63. How many hours per week do you spend reading a newspaper?

64. How many hours per week do you spend listening to the radio?

65. How many hours per week do you spend reading magazines?

GRADES 7, 8, 9, 10 AND 11 STOP HERE !!

GRADE 12 GO ON

PART II -- FOR GRADE 12 ONLY

66. Which of the following statements best describes how you plan to finance your education or training beyond high school?

A1 All finances will be taken care of by parents, scholarship, grant, savings, and/or trust fund.
A2 I will have to work or borrow part of the money, with the remainder being provided by parents, scholarship, grant, savings, and/or trust fund.
A3 I will have to borrow or work for all the money.
A4 I don't know at this time how I will finance my education or training.
A5 I don't plan to continue my education or training beyond high school.

67. Which one of the following types of schools do you expect to attend this fall (or later)?

A1 College (4 years or more)
A2 Junior college (2 years)
A3 Trade school (such as auto mechanics, drafting, electrician)
A4 Technical school (such as electronic, engineering technology)
A5 Business school (such as clerical, keypunch, stenographic, accounting)
B1 Registered Nursing less than a B. S. Degree (not practical nursing)
B2 Apprenticeship training program (such as plumber, electrician, carpenter)
B3 Health services (such as practical nursing, dental technician)
B4 Military service school (non-college program)
B5 Correspondence training
C1 I don't expect to attend any school.

68. Where do you expect to go to school?

A1 I do not expect to go to school.
A2 In my hometown or near enough so I can live at home.
A3 In Iowa but away from home.
A4 Outside of Iowa but in a Midwestern state.
A5 In an Eastern state.
B1 In a Southern state.
B2 In a Western state.
B3 Outside the United States.
B4 I do not know yet.

69. To how many schools have you applied for admission?

A1 None
A2 1
A3 2
A4 3
A5 4 or more

70. What kind of school do you expect to attend this fall?

A1 I do not expect to go to school.
A2 A public (or community) junior college.
A3 A private junior college.
A4 A private or denominational college or university (4 or more years).
A5 A state college or university (4 or more years).
B1 A public (or community) technical or trade school.
B2 A private technical or trade school.
B3 A state technical or trade school.

71. How many times have you changed schools since starting school (not counting promotions from one school to another or school consolidations)?

A1 Never
A2 Once
A3 Twice
A4 3 times
A5 4 times
B1 5 or more times

APPENDIX B

The CardPac Student Questionnaire Summaries, 1965

BIBLIOGRAPHY

Dunn, Francis R. "A Comparison of Selected Educational, Socio-Economic, and Attitudinal Characteristics of Seniors in Two Groups of Iowa School Districts," Research Digest, No. 20, the Iowa Center for Research in School Administration, The University of Iowa, Iowa City, 5 pp.

Educational Data Bank User's Manual, Iowa Educational Information Center, The University of Iowa, Iowa City, Iowa, December, 1965, 35 pp.

Feldt, Leonard S., and Forsyth, Robert A. "The Relationship of ITED Composite Score to the Expectations, Aspirations, Activities and Sociological Characteristics of Iowa High School Students," Iowa Testing Programs Research Report, No. 1, March, 1966, Iowa Testing Programs, The University of Iowa, Iowa City, 43 pp.

Lindquist, E. F. "Implications and Potential of Information Systems in Public Schools," Computer Concepts and Educational Administration, Iowa Educational Information Center, The University of Iowa, Iowa City, 1966, pp. 41-53.

Marker, Robert W. "Computer-Based Educational Information Systems, The Iowa Case," Computer Concepts and Educational Administration, Iowa Educational Information Center, The University of Iowa, Iowa City, 1966, pp. 77-99.

McCaffrey, Kenneth J. "CardPac," Iowa Output, Iowa Educational Information Center, The University of Iowa, Iowa City, September, 1965, 7 pp.

McCaffrey, Kenneth J. "Iowa Educational Information Center," Monitor, Washington, D. C., Vol. IV, No. 2, October, 1965, pp. 4-7.

McCaffrey, Kenneth J. "Iowa Educational Information Center Expands Its UPDATE Services," Midland Schools, Des Moines, Iowa, Vol. 80, No. 2, November-December, 1965, pp. 29, 38.

McCaffrey, Kenneth J. "Iowa Educational Information Center," Epsilon Bulletin, Phi Delta Kappa, College of Education, The University of Iowa, Vol. 39, 1965, pp. 14-17.

McCaffrey, Kenneth J. "Educational Data Bank," Iowa Output, Iowa Educational Information Center, The University of Iowa, Iowa City, January, 1966, 5 pp.

McCaffrey, Kenneth J. "How Study and Teachers Rated by Iowa Students," Midland Schools, Des Moines, Iowa, Vol. 80, No. 3, January-February, 1966, p. 21.

McCaffrey, Kenneth J. "Iowa Study Explores Academic Marking Practices," Midland Schools, Des Moines, Iowa, March-April, 1966, Vol. 80, No. 4, p. 20.

Miller, William G. "UPDATE Student Ranking Service Manual," Iowa Educational Information Center, The University of Iowa, Iowa City, June, 1965, 33 pp.

"Summary of Survey of Marking Procedures and Mark-Point Averages for Iowa Secondary Schools," State of Iowa Department of Public Instruction and the Iowa Educational Information Center, November, 1965, 7 pp.

"UPDATE Principal's Manual for Pupil Scheduling by Computer," Iowa Educational Information Center, University of Iowa, Iowa City, January, 1966, 45 pp.

Van Dusseldorp, Ralph A. "It's in the Cards," Midland Schools, Des Moines, Iowa, Vol, 79, No. 9, May, 1965, P. 26.

Van Dusseldorp, Ralph A. "CardPac... Controversy With A Future," Iowa Educational Bulletin, Des Moines, Iowa, Vol. 35, No. 2, October, 1965.

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Foreword

The Iowa State Department of Public Instruction and the Iowa Educational Information Center are grateful to the administrators, counselors, teachers and pupils of Iowa's public secondary schools whose advice and cooperation made possible the successful initiation of the Iowa CardPac System of Educational Accounting.

The CardPac System will accomplish the following:

a) Provide a comprehensive vehicle to gather data needed by the State Department of Public Instruction.

b) Simplify and consolidate reporting procedures for local school personnel.

c) Provide the most useful analyses and summaries of the data that is possible.

This publication is the initial compilation of raw data for the statewide secondary pupil population. School principals and superintendents received comparable summaries for their individual schools, and further analyses are being made from the statewide totals.

Full support of the CardPac System by all schools will be rewarded through better education for all Iowa school children.

PAUL F. JOHNSTON, Superintendent
Department of Public Instruction

The Iowa CardPac System of Educational Accounting

In May, 1965, the Iowa Educational Information Center, on behalf of the State Department of Public Instruction, introduced the Iowa CardPac System of Educational Accounting in Iowa public secondary schools. The CardPac System is an automated system of data collection and processing developed to standardize and facilitate the reporting of required information by local schools. Eventually it will be extended to all levels of public education from kindergarten through junior college.

Data from the school environment have arbitrarily been categorized into five tracks for conceptual purposes. These data tracks include information about pupils, staff, curriculum, facilities and finances. In its introductory phase the CardPac System is now being used to collect data on the pupil, staff and curriculum tracks, and will, within a short time, be expanded to include data on facilities and finances.

The CardPac System takes advantage of recent developments in high-speed electronic computers and optical scanners for the collection and processing of data. From magnetic tape files the CardPac Processing Service can prepunch information into machine-readable data cards. Administrators, teachers and pupils can then make corrections or additions by marking appropriate card areas with an ordinary pencil. Optical scanners read the cards at speeds up to 36,000 per hour and the computers update the tape files.

The ability to reproduce information from the files quickly and easily can relieve teachers and administrators of much tedious repetition of identical information. Much of the raw data—without identification as to schools or individuals—will be available to researchers and professional organizations, sparing schools from repeated questionnaires asking essentially the same information.

Data from the five tracks can be tied together at a given time, horizontally, to provide school administrators, the Department of Public Instruction and legislators with comprehensive information as to which students. learning what, from which teachers, in what kind of physical space, using what kind of equipment and materials, and at what cost produce what results. Data from any or all tracks can also be traced from year to year and at selected intervals, making possible longitudinal as well as horizontal research. The ability to trace a large sample of students through their entire school experience with reference to academic marks or test results represents a significant contribution in itself. The ability to easily compare these data with such things as teacher preparation and experience, nature of the curriculum and facilities and the level of financial support increases this contribution.

The Iowa CardPac System is being developed and administered by the Iowa Educational Information Center, a joint enterprise of the State Department of Public Instruction and The University of Iowa College of Education. The Center was formally organized in December, 1963, with Robert W. Marker as Director and Ralph A. Van Dusseldorp as Associate Director. Paul F. Johnston, Superintendent, Department of Public Instruction, Howard R. Jones, Dean, College of Education, and E. F. Lindquist, Director, Iowa Testing Programs, serve as Coordinating Board.

The CardPac Student Questionnaire

A 71-part questionnaire was prepared by IEIC personnel after considering suggestions and recommendations from educators throughout the State of Iowa, College of Education faculty members, scholars engaged in educational and psychological research on other campuses, and professional staff members from the U.S. Office of Education and a number of State Departments of Public Instruction. Each of the questions was designed to gather pupil information that will contribute to a better understanding of some educational problem.

A pilot test of the questionnaire was administered by IEIC personnel to 408 pupils in grades seven through twelve on February 25, 1965. A small group from the senior class also participated in a group discussion with the IEIC staff members. Pupil reactions and suggestions concerning the questions and the verbal instructions provided some guidelines for revising and producing the final draft which was administered statewide in May, 1965.

The 71 questions were printed in a 16-page booklet and administered as a part of the routine CardPac data collection. Pupils had the option of omitting any of the questions, and principals were asked to inform their teachers of this fact without specifically announcing it to the pupils. The pupils indicated their responses to the questions by marking appropriate fields on an optical scan data card. This card provided answer spaces for 116 questions, although the questionnaire contained only 65 questions to be answered by grades seven through twelve and an additional six questions for grade twelve only. Principals were also given the option of preparing ten local questions which could be answered on this card for processing with the CardPac questions. A total of 227,079 pupils in 695 schools completed the CardPac materials, and an additional 6,110 pupils in 24 schools were unable to complete the materials because of late delivery or early school closing. The CardPac was not administered to seventh and eighth grade pupils in systems where these grades are part of the elementary school.

During the summer the questionnaire responses were analyzed and individual school reports were compiled summarizing responses by grade to each item. Printed entirely by computer in an average time of three minutes per school, the school report included the actual number of local students who chose each possible response to each item, the percent of local pupils who chose each possible response, and the percent of all students throughout the state who chose each response. One copy of the individual school report was returned to the school principal and one copy to the district superintendent in October.

It is hoped that a study of this report will prove useful to the local school authorities in finding solutions to known problems or in identifying new ones. Perhaps, also, this analysis may stimulate some fresh thinking about possible general improvements in the local educational offering.

For example, local adminstrators concerned with a possible imbalance between vocational and so-called college preparatory courses can make decisions based upon an objective description of the student body in terms of:

(1) The amount of schooling beyond high school that the pupils hope to obtain,
(2) the kinds of colleges they hope to attend,
(3) the vocations or professions they expect to enter,
(4) the extent to which they are prepared to finance their own higher education,
(5) the influence of parental desires on their educational plans, etc.

In the past few administrators have been able to obtain precise information of this kind on which to plan and base decisions. They have had to rely on subjective impressions which may or may not be consistent with the real facts. The CardPac Questionnaire Feedback provides such information on the local student population and, in addition, on the general school population of the state for comparison purposes.

The project demonstrates a new type of service which can be rendered by a central information agency to local school systems and to a state as a whole. The 1965 Student Questionnaire is a first effort in a new direction, primarily a "pilot run" of a system that eventually can produce much broader and more consequential reports.

The value of an analysis of this kind clearly depends upon the nature and quality of the items in the questionnaire administered. A great deal has yet to be learned about what questions most need to be asked, how they may best be phrased, and how the data collected may best be presented. The CardPac Questionnaire will be administered each year, and each time it is administered more will be learned about how the next one can be improved. Each time a report on a questionnaire is prepared much will be learned about how to improve the next and make it more useful and more readily interpretable.

Questionnaire Item Analysis

This report summarizes statewide totals by grade in number and percent in the same sequence in which the items appeared in the questionnaire. Below each item are reproduced the possible responses given in the questionnaire, with the number and percent of pupils answering summarized to the right.

Two columns of figures appear for each grade level. The "N" column shows the actual *number* of pupils who chose each of the possible responses to the question. The second column, labeled "PC" shows the percent of pupils who chose the response.

Percents are a familiar and easy medium to use, but they can be misleading with very small groups. In such cases, the reader is advised to refer to the actual counts in the N column.

The most meaningful grouping of questionnaire items depends, to a great extent, on the comparisons individual administrators seek. In general, the contents of the questionnaire touch upon four broad areas of information:

(1) Biography and environment,
(2) school-related activities,
(3) educational and occupational aspirations and expectations, and
(4) school-related attitudes and perceptions.

An outline of these areas and the questions pertinent to each follows. This particular grouping of items is offered as one usable example, and other logical groupings of items and corresponding response data will occur to readers of this report.

Area 1 Biography and Environment

Includes such characteristics as size of family, parents' occupational and educational level, health, work, study, driving habits, etc.

Item No.	Information
1-5	Size of family; placement of pupil in family
6-8	Parents' occupation
9-10	Parents' education
11-12	Distance to school; mode of transportation
13-14	Pupil time spent in work
15	General health
16	Home study habits
56	Social security number
57-61	Auto driving habits

Area 2 Pupil Activities

Item No.	In-School Activities
18	Athletics
19	Speech; dramatics
20	Music
21	Publications
22	Student government
23	Service clubs
24	Honor societies
25	Academic clubs
26	Hobbies
27	Social activities

Item No.	Outside Activities
62	Watching television
63	Reading newspaper
64	Listening to radio
65	Reading magazines

Area 3 Aspirations and Expectations

Includes educational and occupational goals—in terms of both rosy dreams and more realistic probabilities. In considering the responses, it is well to remember that the aspirations of a pupil are colored in many instances by the relative "glamor" of the choices offered.

Item No.	Goals
37	School grades
38	Job success
39-40	Educational goals
41-42	Occupational goals (boy)
43-45	Occupational goals (girl)

Area 4 Attitudes, Perceptions, and Personal Relationships

Includes the pupil's view of his own standing, his attitudes toward schoolmates, teachers, and schoolwork, and certain pupil-parent relationships affecting study habits.

Item No.	Insights
33	Pupil relationships
29-30 35-36	Teacher relationships
17, 28, 32	School relationships
34, 46-47	Study and homework
52-55	Best and least liked subjects
31, 48-51	Parental attitudes

Special for Seniors

Seniors responded to six additional questions related mainly to post-high school educational plans.

Item No.	Future Plans
66	Finance
67-68, 70	Type and location of school preferred
69	Applications for admission
71	Previous transfers

CARDPAC-SPRING 1965--QUESTIONNAIRE ITEM ANALYSIS

PAGE- 1

STATE-WIDE SUMMARY

01. TOTAL NUMBER OF LIVING CHILDREN IN FAMILY

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
ONE	1061	3	1318	4	1456	4	1778	4	2074	5	2314	6	10001	4
TWO	5137	15	5827	16	6198	16	6898	17	7061	18	7267	19	38388	17
THREE	7234	22	7972	22	8571	22	9009	22	8596	22	8378	22	49760	22
FOUR	6684	20	7239	20	7734	20	8038	20	7420	19	6846	18	43961	19
FIVE	4885	15	4990	14	5567	14	5701	14	4971	13	4359	11	30473	13
SIX	2985	9	3150	9	3530	9	3560	9	3108	8	2648	7	18981	8
SEVEN	1760	5	1924	5	2253	6	2133	5	1857	5	1595	4	11522	5
EIGHT	1100	3	1179	3	1349	3	1299	3	1119	3	977	3	7023	3
NINE	659	2	701	2	816	2	785	2	692	2	585	2	4238	2
TEN	422	1	435	1	515	1	522	1	485	1	402	1	2781	1
ELEVEN	243	1	268	1	311	1	309	1	274	1	197	1	1602	1
TWELVE OR MORE	515	2	507	1	549	1	551	1	442	1	369	1	2933	1
NO RESPONSE	712	2	817	2	774	2	530	1	519	1	2064	5	5416	2
TOTALS	33397		36327		39623		41113		38618		38001		227079	

02. MALE CHILDREN IN FAMILY OLDER THAN STUDENT

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
NONE	16141	48	18321	50	19962	50	22022	54	21944	57	21460	56	119850	53
ONE	9831	29	10610	29	11706	30	11596	28	10164	26	9167	24	63074	28
TWO	4007	12	3912	11	4252	11	4191	10	3614	9	3218	8	23194	10
THREE	1478	4	1545	4	1674	4	1566	4	1330	3	1171	3	8764	4
FOUR	656	2	597	2	616	2	615	1	567	1	481	1	3532	2
FIVE	281	1	264	1	324	1	287	1	224	1	235	1	1615	1
SIX	145		118		156		148		121		98		786	
SEVEN	67		70		55		60		57		52		361	
EIGHT	30		26		31		31		37		16		171	
NINE	20		22		22		23		15		13		115	
TEN	14		7		11		10		12		7		61	
ELEVEN OR MORE	19		12		16		18		11		11		87	
NO RESPONSE	708	2	823	2	798	2	846	1	522	1	2072	5	5469	2
TOTALS	33397		36327		39623		41113		38618		38001		227079	

03. FEMALE CHILDREN IN FAMILY OLDER THAN STUDENT

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
NONE	16785	50	19079	53	20997	53	22897	56	22641	59	22219	58	124618	55
ONE	9629	29	10358	29	11215	28	11289	27	9776	25	8792	23	61059	27
TWO	3905	12	3673	10	4023	10	3975	10	3524	9	3048	8	22148	10
THREE	1344	4	1421	4	1492	4	1365	3	1233	3	1095	3	7950	4
FOUR	552	2	498	1	584	1	544	1	465	1	445	1	3108	1
FIVE	227	1	233	1	260	1	234	1	221	1	180		1355	1
SIX	118		128		133		145		120		81		725	
SEVEN	61		46		56		47		41		30		281	
EIGHT	24		26		31		23		21		16		141	
NINE	18		8		14		16		12		7		75	
TEN	10		6		4		4		1		2		27	
ELEVEN OR MORE	9		12		13		8		10		9		61	
NO RESPONSE	715	2	839	2	801	2	566	1	533	1	2077	5	5531	2
TOTALS	33397		36327		39623		41113		38618		38001		227079	

STATE-WIDE SUMMARY

04. MARITAL STATUS OF PARENTS

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
MARRIED AND LIVING TOGETHER	29161	87	31438	87	34687	88	36068	88	33768	87	31749	84	196871	87
MARRIED BUT NOT LIVING TOGETHER	476	1	513	1	431	1	401	1	378	1	344	1	2543	1
DIVORCED	1881	6	2051	6	1970	5	1978	5	1770	5	1648	4	11298	5
FATHER NOT LIVING	907	3	1129	3	1331	3	1579	4	1579	4	1945	5	8470	4
MOTHER NOT LIVING	243	1	325	1	377	1	468	1	509	1	496	1	2418	1
NEITHER PARENT LIVING	38		51		66		83		95		96		429	
NO RESPONSE	691	2	820	2	761	2	536	1	519	1	1723	5	5050	2
TOTALS	33397		36327		39623		41113		38618		38001		227079	

05. HEADS OF HOUSE IN WHICH YOU LIVE

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
MOTHER AND FATHER	27964	84	30212	83	33459	84	34890	85	32635	85	30710	81	189870	84
MOTHER ONLY	2123	6	2369	7	2413	6	2543	6	2425	6	2375	6	14248	6
FATHER ONLY	475	1	529	1	517	1	590	1	568	1	504	1	3183	1
SOMETIMES MOTHER SOMETIMES FATHER	509	2	429	1	355	1	299	1	220	1	159		1971	1
MOTHER AND STEPFATHER	957	3	1112	3	1129	3	1177	3	1079	3	959	3	6413	3
FATHER AND STEPMOTHER	243	1	301	1	330	1	340	1	347	1	465	1	2026	1
GRANDPARENTS, AUNT, UNCLE OR COUSINS	303	1	322	1	406	1	405	1	418	1	434	1	2288	1
BROTHER OR SISTER	35		53		64		89		138		126		505	
FOSTER PARENTS	73		104		105		126		110		115		633	
NONE OF ABOVE	53		88		105		134		184		413	1	977	
NO RESPONSE	462	2	808	2	740	2	520	1	494	1	1741	5	4965	2
TOTALS	33397		36327		39623		41113		38618		38001		227079	

06. FATHER OCCUPATION

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
FARM OWNER, MANAGER AND/OR RENTER	5537	17	6010	17	9627	24	10291	25	9961	26	9392	25	50818	22
FARM FOREMAN	150		122		168		121		106		116		783	
WORKMAN OR LABORER	1330	4	986	3	1184	3	958	2	704	2	597	2	5759	3
PRIVATE HOUSEHOLD WORKER	4345	13	4607	13	4778	12	5003	12	4418	11	4213	11	27364	12
PROTECTIVE WORKER	15		22		16		15		13		38		119	
SERVICE WORKER	387	1	415	1	389	1	369	1	432	1	362	1	2354	1
SEMI-SKILLED WORKER	824	2	850	2	870	2	863	2	871	2	821	2	5099	2
SKILLED WORKER OR FOREMAN	4261	13	4893	13	4581	12	4782	12	4469	12	4087	11	27073	12
CLERICAL WORKER	4779	14	5441	15	5535	14	5746	14	5375	14	5088	13	31964	14
SALEMAN	692	2	741	2	674	2	696	2	651	2	593	2	4047	2
MANAGER	1887	6	1931	5	1812	5	1919	5	1812	5	1816	5	11177	5
OFFICAL	2284	7	2533	7	2372	6	2507	6	2273	6	2258	6	14227	6
PROPRIETOR OR OWNER	552	2	619	2	582	1	582	1	621	2	695	2	3651	2
PROFESSIONAL	1516	5	1869	5	2121	5	2488	6	2705	7	2782	7	13481	6
TECHNICAL	2136	6	2356	6	2301	6	2494	6	2310	6	2258	6	13855	6
MILITARY SERVICE	346	1	383	1	384	1	366	1	278	1	260	1	2017	1
UNEMPLOYED	129		141		115		116		112		87		700	
DONT KNOW	217	1	242	1	242	1	252	1	214	1	172		1339	1
NO RESPONSE	2010	6	2166	6	1872	5	1545	4	1293	3	2366	6	11252	5
TOTALS	33397		36327		39623		41113		38618		38001		227079	

STATE-WIDE SUMMARY

07. MOTHERS WORK AT PRESENT

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
HOUSEWIFE ONLY	20124	60	21271	59	23685	60	24193	59	22196	57	20844	55	132313	58
HOUSEWIFE + WORK FOR PAY 10 HR WK	2023	6	2155	6	2182	6	2168	5	1880	5	1523	4	11931	5
HOUSEWIFE + WORK FOR PAY 11-20 HR WK	1351	4	1516	4	1590	4	1760	4	1707	4	1591	4	9515	4
HOUSEWIFE + WORK FOR PAY 21-30 HR WK	1872	6	2273	6	2679	7	2945	7	2811	7	2668	7	15248	7
WORKS 30-40 HR PER WEEK FOR PAY	2131	6	2700	7	2951	7	3402	8	3356	9	3365	9	17905	8
WORKS 40 OR MORE HR PER WEEK FOR PAY	3141	9	3487	10	3970	10	4336	11	4610	12	4879	13	24423	11
CANT ANSWER QUESTION	2043	6	2065	6	1779	4	1781	4	1535	4	1272	3	10475	5
NO RESPONSE	712	2	860	2	787	2	528	1	523	1	1859	5	5269	2
TOTALS	33397		36327		39623		41113		38618		38001		227079	

08. MOTHER OCCUPATION

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
HOUSEWIFE ONLY	20372	61	21614	59	24099	61	24858	60	22772	59	21485	57	135200	60
FARM OWNER OR MANAGER	103		104		176		164		211	1	183		941	
WORKER OR LABORER	1135	3	1174	3	1208	3	1300	3	1171	3	1101	3	7089	3
PRIVATE HOUSEHOLD WORKER	374	1	455	1	470	1	501	1	507	1	486	1	2793	1
PROTECTIVE WORKER	43		31		37		31		28		24		194	
SERVICE WORKER	1750	5	1986	5	2178	5	2312	6	2137	6	1988	5	12351	5
SEMI-SKILLED WORKER	1441	4	1691	5	1880	5	1981	5	1979	5	1864	5	10836	5
SKILLED WORKER OR FOREWOMAN	660	2	758	2	802	2	853	2	801	2	766	2	4640	2
CLERICAL WORKER	3507	11	4040	11	4217	11	4460	11	4640	12	4640	12	25504	11
SALES	245	1	266	1	255	1	320	1	280	1	284	1	1650	1
MANAGER	290	1	324	1	341	1	389	1	357	1	351	1	2052	1
OFFICAL	122		103		102		126		123		103		679	
PROPRIETOR OR OWNER	260	1	319	1	416	1	460	1	523	1	503	1	2481	1
PROFESSIONAL	1366	4	1600	4	1799	5	2093	5	2036	5	1975	5	10869	5
TECHNICAL	92		89		91		94		66		77		509	
DONT KNOW	922	3	897	2	758	2	737	2	638	2	451	1	4403	2
NO RESPONSE	715	2	876	2	794	2	434	1	349	1	1720	5	4888	2
TOTALS	33397		36327		39623		41113		38618		38001		227079	

09. FATHERS EDUCATION

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
NO FORMAL SCHOOLING	70		74		79		58		53		40		374	
SOME ELEMENTARY	661	2	771	2	996	3	1128	3	1213	3	1180	3	5949	3
COMPLETED ELEMENTARY	3466	10	4358	12	5885	15	6462	16	6461	17	6603	17	33235	15
SOME HIGH SCHOOL	5998	18	6613	18	7428	19	7810	19	7129	18	6338	17	41316	18
GRADUATED FROM HIGH SCHOOL	10547	32	11107	31	12371	31	12708	31	11831	31	11350	30	69914	31
SOME BUS. TECH. OR TRADE SCHOOL	985	3	1222	3	1409	4	1506	4	1486	4	1420	4	8028	4
COLLEGE LESS THAN FOUR YEARS	975	3	1273	4	1253	3	1328	3	1359	4	1184	3	7372	3
BACHELORS DEGREE	2928	9	3249	9	3410	9	3643	9	3397	9	3319	9	19946	9
MASTER DEGREE	1822	5	1995	5	2007	5	2067	5	1958	5	1897	5	11746	5
DOCTORS DEGREE	772	2	770	2	707	2	724	2	628	2	606	2	4207	2
DONT KNOW	610	2	676	2	653	2	744	2	693	2	657	2	4033	2
NO RESPONSES	4563	14	4219	12	3425	9	2935	7	2410	6	3407	9	20959	9
TOTALS	33397		36327		39623		41113		38618		38001		227079	

STATE-WIDE SUMMARY

10. MOTHERS EDUCATION

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
NO FORMAL SCHOOLING	62		44		46		42		30		31		255	
SOME ELEMENTARY SCHOOL	331	1	314	1	386	1	441	1	416	1	386	1	2274	1
COMPLETED ELEMENTARY SCHOOL	1949	6	2396	7	3301	8	3582	9	3678	10	3803	10	18709	8
SOME HIGH SCHOOL	5299	16	6067	17	6451	16	6846	17	6223	16	5637	15	36523	16
GRADUATED FROM HIGH SCHOOL	14001	42	15236	42	16876	43	17320	42	16220	42	15374	40	95027	42
SOME BUS. TECH. OR TRADE SCHOOL	789	2	951	3	1158	3	1182	3	1183	3	1113	3	6376	3
GRADUATE OF BUS. TECH. TRADE SCHOOL	941	3	1252	3	1439	4	1738	4	1782	5	1749	5	8901	4
COLLEGE LESS THAN 2 YEARS	1789	5	1825	5	2002	5	2153	5	2005	5	2012	5	11786	5
COLLEGE 2 BUT LESS THAN 4 YEARS	2733	8	2954	8	3389	9	3546	9	3208	8	2991	8	18821	8
BACHELORS DEGREE	1534	5	1651	5	1749	4	1856	5	1880	5	1797	5	10467	5
MASTERS DEGREE	212	1	226	1	189		237	1	173		172		1209	1
DOCTORS DEGREE	120		79		66		47		46		33		391	
DONT KNOW	2894	9	2462	7	1776	4	1569	4	1243	3	820	2	10764	5
NO RESPONSE	743	2	870	2	795	2	554	1	531	1	2083	5	5576	2
TOTALS	33397		36327		39623		41113		38618		38001		227079	

11. DISTANCE FROM SCHOOL

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
1/4 MILE OR LESS	3846	12	4070	11	4344	11	3840	9	3691	10	3485	9	23276	10
1/4 TO 1/2 MILE	4218	13	4220	12	4399	11	3693	9	3505	9	3298	9	23333	10
1/2 TO 3/4 MILE	3443	10	3795	10	3504	9	3063	7	2804	7	2570	7	19179	8
3/4 TO 1 MILE	4421	13	4851	13	4352	11	4166	10	3878	10	3728	10	25396	11
1 TO 2 MILES	5175	15	5883	16	5213	13	6093	15	5701	15	5476	14	33541	15
2 TO 5 MILES	4708	14	5379	15	7154	18	8783	21	8456	22	8072	21	42552	19
5 TO 7 MILES	2638	8	2896	8	4016	10	4390	11	3995	10	3740	10	21675	10
7 TO 10 MILES	2315	7	2479	7	3290	8	3583	9	3328	9	3062	8	18057	8
10 TO 15 MILES	1401	4	1406	4	1957	5	2185	5	2017	5	1866	5	10832	5
15 TO 20 MILES	442	1	417	1	521	1	665	2	614	2	511	1	3170	1
MORE THAN 20 MILES	77		101		93		131		121		132		655	
NO RESPONSE	713	2	830	2	780	2	521	1	508	1	2061	5	5413	2
TOTALS	33397		36327		39623		41113		38618		38001		227079	

12. USUAL METHOD OF TRAVEL TO SCHOOL

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
WALK	12296	37	13958	38	13932	35	10917	27	8903	23	7306	19	67312	30
BICYCLE	3974	12	3290	9	1529	4	309	1	185		111		9398	4
CITY BUS	773	2	898	2	[illegible]	2	1545	4	1269	3	844	2	6259	3
SCHOOL BUS	12051	36	12681	35	16592	42	16166	39	13216	34	10614	28	81320	36
FAMILY CAR	2715	8	3495	10	4236	11	6356	15	6148	16	6185	16	29135	13
OWN CAR	112		117		212	1	1498	4	4380	11	7111	19	13430	6
NEIGHBORS CAR	246	1	338	1	414	1	989	2	796	2	612	2	3395	1
CLOSE FRIENDS CAR	506	2	678	2	979	2	2764	7	3151	8	3110	8	11188	5
NO RESPONSE	724	2	872	2	799	2	569	1	570	1	2108	6	5642	2
TOTALS	33397		36327		39623		41113		38618		38001		227079	

STATE-WIDE SUMMARY

13. HOURS PER WEEK WORK FOR PAY

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
NONE	15592	47	15141	42	16847	43	17601	43	15282	40	13953	37	94416	42
1 - 5	9951	30	11502	32	11727	30	10624	26	8047	21	6110	16	57961	26
6 - 10	3812	11	4660	13	4989	13	4789	12	4478	12	3925	10	26653	12
11 - 15	1455	4	1673	5	1975	5	2510	6	3002	8	3134	8	13749	6
16 - 20	765	2	982	3	1247	3	2070	5	2934	8	3413	9	11411	5
21 OR MORE	1061	3	1434	4	1990	5	2988	7	4427	11	5665	15	17565	8
NO RESPONSE	761	2	935	3	848	2	531	1	448	1	1801	5	5324	2
TOTALS	33397		36327		39623		41113		38618		38001		227079	

14. HOURS PER WEEK WORK FOR NO PAY

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
NONE	7866	24	8312	23	8577	22	10000	24	9749	25	9831	26	54335	24
1 - 5	11419	34	12172	34	12010	30	12023	29	11249	29	10705	28	69578	31
6 - 10	5427	16	6050	17	6893	17	6816	17	6512	17	6212	16	37910	17
11 - 15	2629	8	2972	8	3592	9	3651	9	3280	8	3114	8	19238	8
16 - 20	1742	5	1950	5	2396	6	2461	6	2233	6	1997	5	12779	6
21 OR MORE	3442	10	3865	11	5218	13	5571	14	5105	13	4289	11	27490	12
NO RESPONSE	872	3	1006	3	937	2	591	1	490	1	1853	5	5749	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

15. PHYSICAL HEALTH

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
NO PHYSICAL HANDICAPS	30418	91	33301	92	36388	92	38196	93	35771	93	33880	89	207954	92
LOSS OR RESTRICTED USE OF LIMB	334	1	382	1	397	1	383	1	392	1	371	1	2259	1
DEAFNESS IN AT LEAST ONE EAR	240	1	230	1	254	1	217	1	210	1	179		1330	1
BLINDNESS IN AT LEAST ONE EYE	245	1	220	1	213	1	210	1	214	1	188		1290	1
ASTHMA, DIABETES OR OTHER PERM AIL	1369	4	1294	4	1551	4	1535	4	1491	4	1291	3	8531	4
NO RESPONSE	791	2	900	2	820	2	572	1	540	1	2092	6	5715	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

16. HOURS PER WEEK HOMEWORK OUTSIDE SCHOOL

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
NONE	2875	9	2926	8	3867	10	3647	9	3358	9	3545	9	20218	9
1 - 4	17952	54	18038	50	18956	48	18095	44	15781	41	14756	39	103578	46
5 - 9	8763	26	10649	29	11337	29	12624	31	12274	32	11187	29	66834	29
10 - 14	2487	7	3044	8	3754	9	4717	11	4902	13	4743	12	23647	10
15 OR MORE	616	2	784	2	923	2	1473	4	1770	5	1690	4	7256	3
NO RESPONSE	704	2	886	2	786	2	557	1	533	1	2080	5	5546	2
TOTALS	33397		36327		39623		41113		38618		38001		227079	

17. ATTITUDE TOWARD SCHOOL WORK

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
DO VERY BEST IN ALL COURSES	17088	51	16262	45	16633	42	15558	38	14215	37	13595	36	93351	41
DO BEST IN SOME, OTHERS JUST GET BY	12945	39	16041	44	18551	47	20510	50	19663	51	18575	49	106285	47
DO ENOUGH TO GET ALONG IN EACH COURS	2176	7	2689	7	3254	8	3996	10	3721	10	3433	9	19269	8
DONT CARE HOW WELL I DO IN ANY COURS	335	1	362	1	330	1	418	1	404	1	251	1	2100	1
NO RESPONSE	853	3	973	3	855	2	631	2	615	2	2147	6	6074	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

STATE-WIDE SUMMARY

18. PARTICIPATION IN ATHLETICS

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
VERY ACTIVE	8522	26	9519	26	9115	23	8581	21	8328	22	8119	21	52184	23
FAIRLY ACTIVE	9466	28	9764	27	10684	27	9611	23	7753	20	6736	18	54014	24
PARTICIPATED LITTLE	3827	11	4391	12	4642	12	4360	11	4321	11	4491	12	26032	11
DID NOT PARTICIPATE	7931	24	9358	26	13026	33	16926	41	16668	43	15547	41	79456	35
DO NOT HAVE ACTIVITY IN SCHOOL	1512	5	1320	4	1031	3	891	2	913	2	931	2	6598	3
STUDENTS IN THIS GRADE DO NOT PART	1222	4	1013	3	237	1	114		55		54		2695	1
NO RESPONSE	917	3	962	3	888	2	630	2	580	2	2123	6	6100	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

19. PARTICIPATION IN SPEECH AND DRAMATICS

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
VERY ACTIVE	1203	4	1344	4	1923	5	1908	5	3400	9	3894	10	13672	6
FAIRLY ACTIVE	2416	7	2551	7	3150	8	2777	7	4323	11	4882	13	20099	9
PARTICIPATED LITTLE	2206	7	2215	6	2644	7	2576	6	3209	8	3808	10	16658	7
DID NOT PARTICIPATE	10818	32	13422	37	24252	61	30504	74	26517	69	22928	60	128441	57
DO NOT HAVE ACTIVITY IN SCHOOL	6301	19	6423	18	2567	6	419	1	305	1	240	1	16255	7
STUDENTS IN THIS GRADE DO NOT PART.	9418	28	9269	26	4128	10	2239	5	231	1	82		25367	11
NO RESPONSE	1035	3	1103	3	959	2	690	2	633	2	2167	6	6587	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

20. PARTICIPATION IN MUSIC

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
VERY ACTIVE	8453	25	9386	26	9294	23	8335	20	8230	21	8361	22	52059	23
FAIRLY ACTIVE	6648	20	6887	19	7541	19	7003	17	5641	15	4942	13	38662	17
PARTICIPATED LITTLE	1903	6	1931	5	1344	3	1201	3	1321	3	1775	5	9475	4
DID NOT PARTICIPATE	14013	42	15980	44	20160	51	23727	58	22700	59	20669	54	117249	52
DO NOT HAVE ACTIVITY IN SCHOOL	480	1	358	1	140		62		40		23		1103	
STUDENTS IN THIS GRADE DO NOT PART.	855	3	722	2	183		85		53		35		1933	1
NO RESPONSE	1045	3	1063	3	961	2	700	2	633	2	2196	6	6598	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

21. PARTICIPATION IN PUBLICATIONS

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
VERY ACTIVE	959	3	1026	3	1078	3	951	2	2224	6	4387	12	10625	5
FAIRLY ACTIVE	1446	4	1542	4	1456	4	1407	3	2219	6	3778	10	11848	5
PARTICIPATED LITTLE	1319	4	1524	4	1388	4	1124	3	1534	4	2645	7	9534	4
DID NOT PARTICIPATE	14713	44	18133	50	27009	68	32275	79	29929	78	24841	65	146900	65
DO NOT HAVE ACTIVITY IN SCHOOL	5276	16	5512	15	2299	6	240	1	177		93		13597	6
STUDENTS IN THIS GRADE DO NOT PART.	8586	26	7420	20	5370	14	4374	11	1841	5	63		27654	12
NO RESPONSE	1098	3	1170	3	1023	3	742	2	694	2	2194	6	6921	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

STATE-WIDE SUMMARY

	GRADE 7 N	GRADE 7 PC	GRADE 8 N	GRADE 8 PC	GRADE 9 N	GRADE 9 PC	GRADE 10 N	GRADE 10 PC	GRADE 11 N	GRADE 11 PC	GRADE 12 N	GRADE 12 PC	TOTAL N	TOTAL PC
22. PARTICIPATION IN STUDENT GOVERNMENT														
VERY ACTIVE	1523	5	1742	5	1850	5	1472	4	1893	5	2471	7	10951	5
FAIRLY ACTIVE	1439	4	1618	4	1473	4	1352	3	1520	4	1789	5	9191	4
PARTICIPATED LITTLE	981	3	1091	3	1015	3	864	2	1071	3	1427	4	6449	3
DID NOT PARTICIPATE	21567	65	24882	68	32057	81	35726	87	32549	84	29387	77	176168	78
DO NOT HAVE ACTIVITY IN SCHOOL	2909	9	2619	7	1334	3	653	2	726	2	642	2	8883	4
STUDENTS IN THIS GRADE DO NOT PART.	3848	12	3232	9	858	2	305	1	188		53		8484	4
NO RESPONSE	1130	3	1143	3	1036	3	741	2	671	2	2232	6	6953	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	
23. PARTICIPATION IN SERVICE CLUBS														
VERY ACTIVE	2540	8	2858	8	4704	12	5246	13	6050	16	5794	15	27192	12
FAIRLY ACTIVE	2366	7	2561	7	5929	15	6651	16	5888	15	5850	15	29245	13
PARTICIPATED LITTLE	1110	3	1395	4	1974	5	2397	6	2463	6	2939	8	12286	5
DID NOT PARTICIPATE	13466	40	15406	42	20029	51	22987	56	20287	53	17809	47	109984	48
DO NOT HAVE ACTIVITY IN SCHOOL	7873	24	7904	22	4906	12	2868	7	3128	8	3346	9	30025	13
STUDENTS IN THIS GRADE DO NOT PART.	4920	15	5019	14	1056	3	237	1	145		71		11448	5
NO RESPONSE	1114	3	1184	3	1025	3	727	2	657	2	2192	6	6899	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	
24. PARTICIPATION IN HONOR SOCIETIES														
VERY ACTIVE	484	1	512	1	454	1	456	1	1301	3	2185	6	5392	2
FAIRLY ACTIVE	892	3	712	2	655	2	749	2	1193	3	1431	4	5632	2
PARTICIPATED LITTLE	791	2	752	2	673	2	557	1	558	1	640	2	3971	2
DID NOT PARTICIPATE	11486	34	13683	38	19572	49	27672	67	27887	72	25028	66	125328	55
DO NOT HAVE ACTIVITY IN SCHOOL	13157	39	14469	40	10921	28	6056	15	6130	16	6325	17	57058	25
STUDENTS IN THIS GRADE DO NOT PART.	5412	16	4974	14	6305	16	4801	12	829	2	141		22462	10
NO RESPONSE	1175	4	1225	3	1043	3	822	2	720	2	2251	6	7236	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	
25. PARTICIPATION IN ACADEMIC CLUBS														
VERY ACTIVE	1718	5	1635	5	1706	4	1614	4	1496	4	1492	4	9661	4
FAIRLY ACTIVE	2593	8	2491	7	3127	8	2838	7	2462	6	2324	6	15835	7
PARTICIPATED LITTLE	964	3	1017	3	1267	3	1599	4	1592	4	1972	5	8411	4
DID NOT PARTICIPATE	9946	30	12624	35	18842	48	26045	63	24833	64	23114	61	115404	51
DO NOT HAVE ACTIVITY IN SCHOOL	11921	36	12526	34	11873	30	7647	19	7295	19	6742	18	58004	26
STUDENTS IN THIS GRADE DO NOT PART.	5121	15	4869	13	1825	5	604	1	249	1	141		12809	6
NO RESPONSE	1134	3	1165	3	983	2	766	2	691	2	2216	6	6955	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

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                                       STATE-WIDE SUMMARY

                                         GRADE 7    GRADE 8    GRADE 9   GRADE 10   GRADE 11   GRADE 12       TOTAL
                                          N   PC     N   PC     N   PC     N   PC     N   PC     N   PC       N    PC
26. PARTICIPATION IN HOBBY CLUBS OR ACTIVITIES

  VERY ACTIVE                              2461  7   2186  6   1884  5   1489  4   1616  4   1409  4    11045   5
  FAIRLY ACTIVE                            2616  8   2555  7   2627  7   2188  5   2001  5   1929  5    13916   6
  PARTICIPATED LITTLE                      1232  4   1241  3   1453  4   1321  3   1281  3   1525  4     8053   4
  DID NOT PARTICIPATE                      9915 30  12100 33  16945 43  23051 56  21237 55  19473 51   102721  45
  DO NOT HAVE ACTIVITY IN SCHOOL          13504 40  14641 40  14713 37  11948 29  11609 30  11330 30    77745  34
  STUDENTS IN THIS GRADE DO NOT PART.      2609  8   2482  7   1020  3    382  1    189        116        6798   3
  NO RESPONSE                              1060  3   1122  3    981  2    734  2    685  2   2219  6     6801   3
                                TOTALS    33397      36327      39623      41113      38618      38001     227079

27. PARTICIPATION IN SOCIAL ACTIVITIES

  VERY ACTIVE                              8694 26   9937 27  10519 27  10083 25  11094 29  10603 28    60930  27
  FAIRLY ACTIVE                            8207 25   9807 27  12783 32  13670 33  12972 34  12762 34    70201  31
  PARTICIPATED LITTLE                      4388 13   5047 14   7144 18   8052 20   7489 19   7366 19    39486  17
  DID NOT PARTICIPATE                      6346 19   6680 18   7047 18   8344 20   6186 16   4896 13    39499  17
  DO NOT HAVE ACTIVITY IN SCHOOL           2128  6   1783  5   1002  3    209  1    222  1    172         5516   2
  STUDENTS IN THIS GRADE DO NOT PART.      2654  8   2065  6    230  1     99         30         29        5107   2
  NO RESPONSE                               980  3   1008  3    898  2    656  2    625  2   2173  6     6340   3
                                TOTALS    33397      36327      39623      41113      38618      38001     227079

28. ATTITUDE TOWARD SCHOOL THIS YEAR

  LIKE VERY MUCH                           6828 20   5980 16   6661 17   6231 15   5548 14   6476 17    37724  17
  ENJOYABLE MOST OF TIME                  15092 45  16723 46  19271 49  20244 49  19464 50  18770 49   109564  48
  DONT PARTICULARLY LIKE OR DISLIKE        9439 28  11289 31  11423 29  12352 30  11199 29   9161 24    64863  29
  WOULD RATHER NOT GO                      1057  3   1168  3   1209  3   1397  3   1342  3    840  2     7013   3
  DISLIKE AND WILL LEAVE                    268  1    298  1    284  1    355  1    527  1    679  2     2411   1
  NO RESPONSE                               713  2    869  2    775  2    534  1    538  1   2075  5     5504   2
                                TOTALS    33397      36327      39623      41113      38618      38001     227079

29. ATTITUDE TOWARD TEACHERS

  MOST TREAT FAIRLY AND FRIENDLY          26608 80  28499 78  31168 79  32501 79  30769 80  30152 79   179697  79
  MOST FAIR BUT PERSONALLY UNCONCERNED     3389 10   4069 11   4722 12   5411 13   5005 13   4309 11    26905  12
  FEW FAIR-MOST PERSONALLY UNCONCERNED     1055  3   1267  3   1348  3   1382  3   1341  3   1052  3     7445   3
  SOME DISLIKE ME AND GIVE HARD TIME       1352  4   1372  4   1361  3   1210  3    995  3    664  2     6954   3
  NEARLY ALL TEACHERS ARE AGAINST ME        257  1    248  1    207  1    163        129         78        1082
  NO RESPONSE                               736  2    872  2    817  2    446  1    379  1   1746  5     4996   2
                                TOTALS    33397      36327      39623      41113      38618      38001     227079

30. DO TEACHERS GIVE INDIVIDUAL HELP WHEN ASKED

  YES                                     28205 84  30521 84  33623 85  35023 85  33118 86  31854 84   192344  85
  NO                                       4381 13   4822 13   5081 13   5523 13   5035 13   4308 11    29150  13
  NO RESPONSE                               811  2    984  3    919  2    567  1    465  1   1839  5     5585   2
                                TOTALS    33397      36327      39623      41113      38618      38001     227079
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CARDPAC-SPRING 1965--QUESTIONNAIRE ITEM ANALYSIS

STATE-WIDE SUMMARY

	GRADE 7 N	GRADE 7 PC	GRADE 8 N	GRADE 8 PC	GRADE 9 N	GRADE 9 PC	GRADE 10 N	GRADE 10 PC	GRADE 11 N	GRADE 11 PC	GRADE 12 N	GRADE 12 PC	TOTAL N	TOTAL PC
31. DO PARENTS TAKE INTEREST IN SCHOOLWORK														
YES	30161	90	32111	88	34611	87	35617	87	33011	85	30825	81	196336	86
NO	2428	7	3266	9	4063	10	4753	12	4849	13	4831	13	24190	11
I HAVE NO PARENTS	72		98		119		136		133		147		705	
NO RESPONSE	736	2	852	2	830	2	607	1	625	2	2198	6	5848	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	
32. IF YOU HAVE CHILDREN OF YOUR OWN YOU WOULD														
INSIST DO BEST AND STAY IN SCHOOL	27347	82	28813	79	30231	76	30544	74	27345	71	23806	63	168086	74
ENCOURAGE GOING AS LONG AS THEY WANT	4504	13	5700	16	7577	19	8996	22	9748	25	11316	30	47841	21
LEAVE SCHOOLWORK AND PLANS TO THEM	654	2	773	2	839	2	856	2	847	2	642	2	4611	2
DISCOURAGE FROM GOING TO SCHOOL	90		107		104		112		82		88		583	
NO RESPONSE	802	2	934	3	872	2	605	1	596	2	2149	6	5958	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	
33. UNPLEASANT EXPERIENCES WITH OTHER STUDENTS														
A GREAT MANY	1317	4	1168	3	981	2	872	2	713	2	511	1	5562	2
QUITE A FEW	2782	8	2835	8	2735	7	2389	6	1971	5	1641	4	14353	6
NOT VERY MANY	9686	29	10523	29	10981	28	10370	25	9523	25	8881	23	59964	26
VERY FEW	14401	43	16127	44	18429	47	19701	48	19165	50	19124	50	106947	47
NONE	4428	13	4783	13	5654	14	7199	18	6671	17	5720	15	34455	15
NO RESPONSE	783	2	891	2	843	2	582	1	575	1	2124	6	5798	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	
34. GENERAL ATTITUDE TO STUDYING														
I REALLY LIKE IT	1443	4	1107	3	947	2	881	2	826	2	974	3	6178	3
I LIKE IT MOST OF THE TIME	10419	31	10337	28	11076	28	10846	26	10846	28	11062	29	64586	28
CANT SAY I LIKE OR DISLIKE IT	16943	51	18893	52	20798	52	21431	52	19365	50	17879	47	115309	51
I DISLIKE IT MOST OF THE TIME	3042	9	4163	11	4888	12	6098	15	5808	15	5000	13	28999	13
I DISLIKE IT VERY MUCH	791	2	959	3	1108	3	1302	3	1221	3	989	3	6370	3
NO RESPONSE	759	2	868	2	806	2	555	1	552	1	2097	6	5637	2
TOTALS	33397		36327		39623		41113		38618		38001		227079	
35. DO YOU RECEIVE ENOUGH RECOGNITION FROM TEACHERS THIS YEAR														
NEVER	845	3	915	3	845	2	888	2	825	2	680	2	4998	2
ALMOST NEVER	2724	8	2870	8	2867	7	2787	7	2372	6	1882	5	15502	7
USUALLY	23242	70	26038	72	29407	74	31065	76	29422	76	27802	73	166976	74
ALWAYS	5605	17	5426	15	5515	14	5674	14	5328	14	5468	14	33016	15
NO RESPONSE	981	3	1078	3	989	2	699	2	671	2	2169	6	6587	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

STATE-WIDE SUMMARY

36. HOW DO TEACHERS VIEW YOU

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
AS A TOP STUDENT	1456	4	1742	5	1820	5	1774	4	1870	5	2543	7	11205	5
A GOOD STUDENT	10029	30	11158	31	11542	29	11991	29	11644	30	12231	32	68595	30
AN AVERAGE STUDENT	17687	53	18692	51	21513	54	22097	54	20344	53	18658	49	118991	52
A BELOW AVERAGE STUDENT	2744	8	3129	9	3375	9	3975	10	3596	9	2430	6	19249	8
A VERY POOR STUDENT	582	2	599	2	460	1	579	1	491	1	315	1	3026	1
NO RESPONSE	899	3	1007	3	913	2	697	2	673	2	1824	5	6013	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

37. IF IN SCHOOL NEXT YEAR WILL PROBABLY

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
GET VERY LOW GRADES	838	3	827	2	729	2	685	2	566	1	1000	3	4645	2
GET BELOW AVERAGE GRADES	2611	8	2926	8	3253	8	3561	8	3284	9	3404	9	19039	8
GET AVERAGE GRADES	14879	45	16341	45	18453	47	18360	45	16768	43	18953	50	103754	46
GET ABOVE AVERAGE GRADES	11956	36	12931	36	13905	35	14947	36	14544	38	10996	29	79279	35
GET QUITE HIGH GRADES	2273	7	2365	7	2438	6	2945	7	2860	7	1000	3	13881	6
NO RESPONSE	840	3	937	3	845	2	615	1	596	2	2648	7	6481	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

38. WHEN GET A JOB WILL PROBABLY

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
BE EXTREMELY SKILLED AT IT	4393	13	5431	15	5464	14	5549	13	5821	15	6574	17	33232	15
BE A GOOD WORKER BUT NOT PERFECT	21771	65	24279	67	27870	70	30299	74	28827	75	27299	72	160345	71
BE A FAIR WORKER	5714	17	5198	14	4942	12	4225	10	2991	8	2084	5	25154	11
BE A POOR WORKER BUT WILLING TO TRY	484	1	327	1	346	1	278	1	228	1	103		1766	1
HAVE HARD TIME HOLDING THE JOB	90		72		64		60		50		48		384	
NO RESPONSE	943	3	1020	3	937	2	702	2	701	2	1893	5	6198	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

39. EDUCATIONAL ASPIRATIONS

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
LESS THAN HIGH SCHOOL GRADUATION	683	2	468	1	339	1	285	1	193		117		2085	1
HIGH SCHOOL GRADUATION	5489	16	5295	15	5091	13	4656	11	3611	9	2111	6	26253	12
ON THE JOB TRAINING	1612	5	1673	5	2154	5	2346	6	2474	6	2612	7	12871	6
GO TO SCHOOL IN MILITARY SERVICE	1996	6	1740	5	1820	5	1774	4	1444	4	1001	3	9775	4
TECH. TRADE OR BUS. SCH-2YRS OR LESS	1530	5	2406	7	3911	10	4960	12	5264	14	4791	13	22862	10
TECH. TRADE OR BUS. SCH-MORE 2 YRS	1649	5	2137	6	2800	7	2971	7	2695	7	2320	6	14572	6
SOME COLLEGE, NOT GRADUATE	1061	3	914	3	838	2	803	2	723	2	627	2	4966	2
COMPLETE JUNIOR COLLEGE	2896	9	2801	8	2947	7	2829	7	2458	6	2061	5	15992	7
BACHELORS DEGREE	9074	27	10699	29	11466	29	12002	29	11432	30	11278	30	65951	29
BEYOND A BACHELORS DEGREE	6319	19	7078	19	7275	18	7839	19	7760	20	9139	24	45410	20
NO RESPONSE	1088	3	1116	3	982	2	646	2	564	1	1944	5	6342	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

STATE-WIDE SUMMARY

40. EDUCATIONAL EXPECTATIONS

	GRADE 7 N	GRADE 7 PC	GRADE 8 N	GRADE 8 PC	GRADE 9 N	GRADE 9 PC	GRADE 10 N	GRADE 10 PC	GRADE 11 N	GRADE 11 PC	GRADE 12 N	GRADE 12 PC	TOTAL N	TOTAL PC
LESS THAN HIGH SCHOOL GRADUATION	793	2	669	2	467	1	476	1	409	1	435	1	3249	1
HIGH SCHOOL GRADUATION	7535	23	8074	22	8825	22	8854	22	7914	20	6411	17	47613	21
ON THE JOB TRAINING	1215	4	1315	4	1601	4	1700	4	1812	5	2379	6	10022	4
GO TO SCHOOL IN MILITARY SERVICE	1398	4	1445	4	1650	4	1779	4	1576	4	1282	3	9134	4
TECH. TRADE, BUS. SCH-2 YRS OR LESS	1587	5	2457	7	4148	10	5431	13	5530	14	5133	14	24286	11
TECH. TRADE, BUS. SCH-MORE 2 YRS.	1642	5	2102	6	2655	7	2892	7	2412	6	1993	5	13696	6
SOME COLLEGE, NOT GRADUATE	2194	7	1897	5	1809	5	1650	4	1447	4	1358	4	10363	5
COMPLETE JUNIOR COLLEGE	3782	11	3459	10	3575	9	3347	8	2816	7	2338	6	19317	9
BACHELORS DEGREE	8759	26	10433	29	10871	27	11278	27	11118	29	11097	29	63556	28
BEYOND A BACHELORS DEGREE	2941	9	3030	8	2789	7	2869	7	2917	8	3605	9	18151	8
NO RESPONSE	1551	5	1446	4	1225	3	833	2	667	2	1970	5	7692	3
TOTALS	33397		36327		39625		41119		38618		38001		227079	

41. OCCUPATIONAL ASPIRATIONS - BOYS

	GRADE 7 N	GRADE 7 PC	GRADE 8 N	GRADE 8 PC	GRADE 9 N	GRADE 9 PC	GRADE 10 N	GRADE 10 PC	GRADE 11 N	GRADE 11 PC	GRADE 12 N	GRADE 12 PC	TOTAL N	TOTAL PC
CANT SAY AT THIS TIME	2982	18	2790	15	2753	14	2795	13	2391	12	1759	9	15470	14
FARM OWNER AND/OR MANAGER	1415	8	1348	7	2055	10	1927	9	1600	8	1359	7	9704	8
FARM FOREMAN	142	1	101	1	105	1	83		63		49		543	
FARM WORKER	400	2	293	2	329	2	262	1	154	1	90		1528	1
WORKMAN OR LABORER	527	3	601	3	635	3	669	3	571	3	418	2	3421	3
PRIVATE HOUSEHOLD WORKER	40		17		26		15		13		11		122	
PROTECTIVE WORKER	514	3	479	3	457	2	466	2	327	2	244	1	2487	2
SERVICE WORKER	177	1	195	1	213	1	218	1	201	1	163	1	1167	1
SEMI-SKILLED WORKER	662	4	657	4	691	3	765	4	714	4	550	3	4039	4
SKILLED WORKER OR FOREMAN	1703	10	2208	12	2697	14	2817	14	2806	14	2684	14	14917	13
CLERICAL WORKER	129	1	172	1	258	1	366	2	362	2	405	2	1692	1
SALESMAN	181	1	186	1	199	1	205	1	227	1	211	1	1209	1
MANAGER	372	2	349	2	401	2	461	2	627	3	828	4	3038	3
OFFICIAL	238	1	259	1	274	1	265	1	348	2	337	2	1721	2
PROPRIETOR OR OWNER	355	2	402	2	438	2	515	2	541	3	546	3	2797	2
PROFESSIONAL	4583	27	5607	31	5921	30	6509	31	6454	33	6820	36	35894	31
TECHNICAL	951	6	1316	7	1430	7	1533	7	1307	7	1222	6	7759	7
MILITARY SERVICE	854	5	727	4	533	3	499	2	388	2	232	1	3233	3
NO RESPONSE	614	4	606	3	482	2	381	2	395	2	1131	6	3609	3
TOTALS	16839		18313		19897		20749		19491		19057		114346	

STATE-WIDE SUMMARY

42. OCCUPATIONAL EXPECTATIONS-BOYS

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
CANT SAY AT THIS TIME	2752	16	2723	15	2756	14	2889	14	2469	13	1804	9	15393	13
FARM OWNER AND/OR MANAGER	1410	8	1298	7	2033	10	1885	9	1567	8	1208	6	9401	8
FARM FOREMAN	172	1	133	1	146	1	114	1	88		53		706	1
FARM WORKER	591	4	449	2	492	2	412	2	269	1	164	1	2377	2
WORKMAN OR LABORER	857	5	970	5	1105	6	1285	6	1109	6	820	4	6146	5
PRIVATE HOUSEHOLD WORKER	45		32		25		17		11		11		142	
PROTECTIVE WORKER	442	3	351	2	332	2	317	2	209	1	163	1	1814	2
SERVICE WORKER	232	1	228	1	227	1	227	1	254	1	189	1	1357	1
SEMI-SKILLED WORKER	856	5	979	5	1037	5	1156	6	1136	6	1008	5	6172	5
SKILLED WORKER OR FOREMAN	1837	11	2296	13	2708	14	2833	14	2809	14	2757	14	15240	13
CLERICAL WORKER	217	1	259	1	319	2	406	2	436	2	502	3	2139	2
SALESMAN	348	2	297	2	271	1	282	1	282	1	287	1	1734	1
MANAGER	451	3	426	2	483	2	493	2	620	3	812	4	3285	3
OFFICIAL	240	1	267	1	224	1	254	1	242	1	287	1	1528	1
PROPRIETOR OR OWNER	444	3	479	3	487	2	496	2	490	3	481	3	2877	3
PROFESSIONAL	3593	21	4494	25	4826	24	5319	26	5399	28	5885	31	29516	26
TECHNICAL	736	4	1099	6	1185	6	1222	6	1079	6	1127	6	6448	6
MILITARY SERVICE	779	5	724	4	583	3	589	3	475	2	268	1	3418	3
NO RESPONSE	832	5	808	4	658	3	553	3	547	3	1261	7	4659	4
TOTALS	16839		18313		19897		20749		19491		19057		114346	

43. OCCUPATIONAL ASPIRATIONS-GIRLS

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
CANT SAY AT THIS TIME	2117	13	1676	10	1912	8	1619	7	1142	6	790	4	9256	8
HOUSEWIFE	2534	16	2225	13	2411	12	2859	14	3091	16	3554	19	16674	15
FARM OWNER AND/OR MANAGER	168	1	113	1	96		74		62		61		574	1
WORKER OR LABORER	134	1	85		62		65		45		37		428	
PRIVATE HOUSEHOLD WORKER	81	1	84		100	1	88		80		80		513	
PROTECTIVE WORKER	128	1	118	1	106	1	81		45		42		520	
SERVICE WORKER	1811	11	2166	12	2445	13	2592	13	2264	12	1636	9	12914	12
SEMI-SKILLED WORKER	54		55		60		53		74		126	1	422	
SKILLED WORKER OR FOREWOMAN	586	4	551	3	538	3	448	2	371	2	361	2	2855	3
CLERICAL WORKER	1454	9	2281	13	3040	16	3204	16	3135	17	3082	17	16196	15
SALES	14		13		10		11		25		28		101	
MANAGER	43		24		44		60		94	1	149	1	414	
OFFICIAL	47		43		57		41		46		52		286	
PROPRIETOR OR OWNER	63		67		64		75		92		105	1	466	
PROFESSIONAL	5943	37	7153	41	7764	40	7903	40	7378	39	6982	37	43123	39
TECHNICAL	301	2	280	2	332	2	400	2	405	2	444	2	2162	2
MILITARY SERVICE	167	1	160	1	167	1	189	1	140	1	62		885	1
NO RESPONSE	474	3	478	3	451	2	315	2	297	2	1044	6	3059	3
TOTALS	16116		17572		19259		19877		18786		18635		110245	

CARDPAC-SPRING 1965--QUESTIONNAIRE ITEM ANALYSIS

STATE-WIDE SUMMARY

44. OCCUPATIONAL EXPECTATIONS-GIRLS

	GRADE 7 N	GRADE 7 PC	GRADE 8 N	GRADE 8 PC	GRADE 9 N	GRADE 9 PC	GRADE 10 N	GRADE 10 PC	GRADE 11 N	GRADE 11 PC	GRADE 12 N	GRADE 12 PC	TOTAL N	TOTAL PC
CANT SAY AT THIS TIME	2344	15	2144	12	2023	12	1949	10	1576	8	1130	6	11166	10
HOUSEWIFE	4095	25	3918	22	4235	22	4675	24	4666	25	4535	24	26124	24
FARM OWNER AND/OR MANAGER	134	1	91	1	79		57		35		26		422	
WORKER OR LABORER	225	1	133	1	104	1	106	1	94	1	59		721	1
PRIVATE HOUSEHOLD WORKER	145	1	138	1	117	1	104	1	107	1	96	1	707	1
PROTECTIVE WORKER	57		44		40		27		24		9		201	
SERVICE WORKER	1451	9	1756	10	2087	11	2205	11	1911	10	1435	8	10845	10
SEMI-SKILLED WORKER	84	1	82		93		92		135	1	245	1	731	1
SKILLED WORKER OR FOREWOMAN	579	4	511	3	551	3	418	2	342	2	349	2	2750	2
CLERICAL WORKER	1576	10	2412	14	3251	17	3541	18	3407	18	3681	20	17868	16
SALES	26		19		15		17		25		26		128	
MANAGER	46		37		35		48		64		92		322	
OFFICIAL	42		32		48		22		34		34		212	
PROPRIETOR OR OWNER	63		66		60		59		61		61		370	
PROFESSIONAL	4362	27	5368	31	5675	29	5771	29	5570	30	5392	29	32138	29
TECHNICAL	237	1	196	1	270	1	332	2	346	2	394	2	1775	2
MILITARY SERVICE	124	1	104	1	108	1	127	1	80		41		584	1
NO RESPONSE	526	3	521	3	468	2	327	2	309	2	1030	6	3181	3
TOTALS	16116		17572		19259		19877		18786		18635		110245	

45. FUTURE VOCATION--GIRLS

	GRADE 7 N	GRADE 7 PC	GRADE 8 N	GRADE 8 PC	GRADE 9 N	GRADE 9 PC	GRADE 10 N	GRADE 10 PC	GRADE 11 N	GRADE 11 PC	GRADE 12 N	GRADE 12 PC	TOTAL N	TOTAL PC
LIFETIME CAREER OTHER HOMEMAKER	1423	9	1274	7	1141	6	1012	5	931	5	735	4	6516	6
HOMEMAKER	2595	16	1981	11	1741	9	1783	9	1672	9	1483	8	11255	10
BOTH CAREER AND HOMEMAKER	3047	19	3108	18	2720	14	2341	12	2017	11	1904	10	15137	14
CAREER FOR AWHILE, THEN HOMEMAKER	4031	25	5269	30	7078	37	8162	41	7878	42	7792	42	40210	36
CAREER, THEN BOTH CAREER + HOMEMAKER	4389	27	5362	31	6063	31	6203	31	5926	32	5658	30	33601	30
NO RESPONSE	631	4	578	3	516	3	376	2	362	2	1063	6	3526	3
TOTALS	16116		17572		19259		19877		18786		18635		110245	

46. HOURS DAILY HOMEWORK OUT SCHOOL SHOULD BE REQUIRED

	GRADE 7 N	GRADE 7 PC	GRADE 8 N	GRADE 8 PC	GRADE 9 N	GRADE 9 PC	GRADE 10 N	GRADE 10 PC	GRADE 11 N	GRADE 11 PC	GRADE 12 N	GRADE 12 PC	TOTAL N	TOTAL PC
NONE	778	2	840	2	1156	3	1268	3	1459	4	1348	4	6849	3
LESS THAN 30 MINUTES	2411	7	2273	6	2290	6	1897	5	1614	4	1211	3	11696	5
BETWEEN 30 MINUTES AND AN HOUR	15102	45	15551	43	15231	38	13884	34	11155	29	9554	25	80477	35
BETWEEN ONE HOUR AND TWO HOURS	11977	36	14384	40	17330	44	20099	49	19740	51	19177	50	102707	45
MORE THAN TWO HOURS	1860	6	2090	6	2589	7	3308	8	4128	11	4868	13	18838	8
NO RESPONSE	1269	4	1189	3	1027	3	657	2	527	1	1843	5	6512	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

47. ATTITUDE TOWARD HOMEWORK ASSIGNED

	GRADE 7 N	GRADE 7 PC	GRADE 8 N	GRADE 8 PC	GRADE 9 N	GRADE 9 PC	GRADE 10 N	GRADE 10 PC	GRADE 11 N	GRADE 11 PC	GRADE 12 N	GRADE 12 PC	TOTAL N	TOTAL PC
USUALLY ASSIGN TOO MUCH	5732	17	6823	19	7216	18	8795	21	8588	22	7137	19	44291	20
USUALLY ASSIGN ABOUT THE RIGHT AMOUN	25092	75	27114	75	30214	76	30545	74	28366	73	27305	72	168636	74
USUALLY ASSIGN TOO LITTLE	1260	4	1153	3	1100	3	1080	3	1093	3	1688	4	7374	3
NO RESPONSE	1313	4	1237	3	1093	3	693	2	571	1	1871	5	6778	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

STATE-WIDE SUMMARY

	GRADE 7		GRADE 8		GRADE 9		GRADE 10		GRADE 11		GRADE 12		TOTAL	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
48. ARE YOUR PARENTS GLAD TO HELP YOU WITH YOUR HOMEWORK														
YES	18234	55	17520	48	16655	42	16501	40	15076	39	14459	38	98445	43
NO	1906	5	2008	6	2278	6	2858	6	3160	8	3258	9	15068	7
YES BUT OFTEN DONT KNOW HOW	10021	30	12863	35	16474	42	17071	42	15649	41	14306	38	86384	38
I CANT ANSWER THIS QUESTION	2271	7	2628	7	3045	8	3895	9	4098	11	4048	11	19985	9
NO RESPONSE	1365	4	1308	4	1171	3	788	2	635	2	1930	5	7197	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	
49. DO YOUR PARENTS ENCOURAGE YOU TO DO YOUR HOMEWORK														
YES IF I DONT DO ON OWN INITIATIVE	27787	83	30599	84	33303	84	33915	82	31183	81	28612	75	185399	82
NO	1568	5	1823	5	2420	6	3261	8	3776	10	4369	11	17217	8
I CANT ANSWER THIS QUESTION	2633	8	2560	7	2740	7	3041	7	2830	7	2710	7	16514	7
NO RESPONSE	1409	4	1345	4	1160	3	896	2	829	2	2310	6	7949	4
TOTALS	33397		36327		39623		41113		38618		38001		227079	
50. DO PARENTS FREQUENTLY ARGUE WITH YOU ABOUT GETTING YOUR HOMEWORK DONE														
YES	8934	27	9234	25	9405	24	9705	24	8260	21	6500	17	52038	23
NO	20568	62	23432	65	26709	67	28371	69	27623	72	27614	73	154317	68
I CANT ANSWER THIS QUESTION	2476	7	2337	6	2365	6	2177	5	1937	5	1606	4	12898	6
NO RESPONSE	1419	4	1324	4	1144	3	860	2	798	2	2281	6	7826	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	
51. PARENTAL ATTITUDE TOWARD HOMEWORK ASSIGNED														
FEEL TEACHERS GIVE TOO MUCH	3972	12	4914	14	5202	13	6408	16	6218	16	5335	14	32049	14
FEEL TEACHERS GIVE ABOUT RIGHT AMT.	18938	57	19383	53	21173	53	20044	49	18070	47	16868	44	114476	50
FEEL TEACHERS GIVE TOO LITTLE	2630	8	2919	8	2864	7	2720	7	2179	6	2202	6	15514	7
PROBABLY DONT CARE ONE WAY OR OTHER	2158	6	2626	7	3339	8	4021	10	4063	11	4234	11	20441	9
I CANT ANSWER THIS QUESTION	4266	13	5165	14	5932	15	7080	17	7320	19	7090	19	36862	16
NO RESPONSE	1433	4	1320	4	1113	3	831	2	768	2	2272	6	7737	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	
52. BEST LIKED SUBJECTS														
MATHEMATICS	5424	16	5978	16	7459	19	6555	16	5825	15	5460	14	36701	16
ENGLISH	3812	11	4328	12	5035	13	5556	14	4993	13	4662	12	28386	13
SOCIAL STUDIES	3849	12	4574	13	3252	8	4258	10	4547	12	3927	10	24407	11
SCIENCES	4816	14	4996	14	5604	14	6205	15	4343	11	4259	11	30223	13
FOREIGN LANGUAGES	546	2	650	2	1067	3	1044	3	1032	3	890	2	5229	2
INDUSTRIAL ARTS	2794	8	4460	12	5794	15	5720	14	5647	15	5139	14	29554	13
MUSIC	2062	6	2193	6	2539	6	2592	6	2121	5	1994	5	13501	6
ART	2744	8	2305	6	1991	5	1928	5	1893	5	1798	5	12659	6
PHYSICAL EDUCATION	5730	17	5197	14	5018	13	4660	11	3706	10	2859	8	27170	12
BUSINESS EDUCATION	143		332	1	694	2	1714	4	3733	10	4745	12	11361	5
NO RESPONSE	1477	4	1314	4	1170	3	881	2	778	2	2268	6	7888	3
TOTALS	33397		36327		39623		41113		38618		38001		227079	

STATE-WIDE SUMMARY

	GRADE 7 N	GRADE 7 PC	GRADE 8 N	GRADE 8 PC	GRADE 9 N	GRADE 9 PC	GRADE 10 N	GRADE 10 PC	GRADE 11 N	GRADE 11 PC	GRADE 12 N	GRADE 12 PC	TOTAL N	TOTAL PC
53. LEAST LIKED SUBJECTS														
MATHEMATICS	8181	24	8510	23	8876	22	10113	25	9046	23	8546	22	53274	23
ENGLISH	5271	16	5657	16	7037	18	6857	17	6960	18	6514	17	38296	17
SOCIAL STUDIES	5684	17	5823	16	5841	15	7550	18	7441	19	6404	17	38743	17
SCIENCES	3857	12	4701	13	6034	15	5055	12	4843	13	4875	13	29365	13
FOREIGN LANGUAGES	2002	6	2762	8	3575	9	4089	10	3619	9	3452	9	19499	9
INDUSTRIAL ARTS	561	2	1104	3	1358	3	1167	3	1004	3	1016	3	6210	3
MUSIC	2786	8	2559	7	2074	5	1897	5	1578	4	1574	4	12468	5
ART	2098	6	2302	6	1934	5	1581	4	1253	3	1288	3	10456	5
PHYSICAL EDUCATION	941	3	1056	3	1076	3	1075	3	1044	3	976	3	6168	3
BUSINESS EDUCATION	348	1	388	1	557	1	760	2	948	2	1021	3	4022	2
NO RESPONSE	1668	5	1465	4	1261	3	969	2	880	2	2335	6	8578	4
TOTALS	33397		36327		39623		41113		38618		38001		227079	
54. REASON FOR CHOICE IN QUESTION 52														
LIKE THE TEACHER	2917	9	2353	6	2246	6	1707	4	1246	3	840	2	11309	5
INTERESTING AND STIMULATING	14481	43	16792	46	18968	48	21381	52	20727	54	20528	54	112877	50
EASY SUBJECT	1614	5	1525	4	1555	4	1233	3	962	2	683	2	7572	3
LIKE OTHER STUDENTS IN CLASS	255	1	256	1	252	1	243	1	174		117		1297	1
WILL NEED IT LATER IN LIFE	3558	11	4357	12	5171	13	5400	13	5544	14	5145	14	29175	13
AM GOOD IN THIS SUBJECT	6101	18	6944	19	7460	19	7536	18	6869	18	6526	17	41436	18
SOME OTHER REASON	2727	8	2584	7	2674	7	2616	6	2210	6	1814	5	14625	6
NO RESPONSE	1744	5	1516	4	1297	3	997	2	886	2	2348	6	8788	4
TOTALS	33397		36327		39623		41113		38618		38001		227079	
55. REASON FOR CHOICE IN QUESTION 53														
DISLIKE THE TEACHER	3421	10	3414	9	3019	8	2203	5	1679	4	1046	3	14782	7
IT IS HARD FOR ME	11223	34	13138	36	15316	39	17359	42	16797	43	16429	43	90262	40
REQUIRES TOO MUCH HOMEWORK	868	3	734	2	710	2	743	2	618	2	474	1	4147	2
DONT LIKE SOME STUDENTS IN CLASS	200	1	132		141		90		65		37		665	
CANT SEE VALUE OF SUBJECT	2577	8	3209	9	3643	9	4160	10	4022	10	3343	9	20954	9
ITS BORING	5466	16	5900	16	6358	16	6174	15	5426	14	5306	14	34630	15
JUST DONT LIKE IT	5289	16	5946	16	6771	17	7015	17	6756	17	6562	17	38339	17
SOME OTHER REASON	2491	7	2212	6	2300	6	2259	5	2271	6	2384	6	13917	6
NO RESPONSE	1862	6	1642	5	1365	3	1110	3	984	3	2420	6	9383	4
TOTALS	33397		36327		39623		41113		38618		38001		227079	
56. DO YOU HAVE A SOCIAL SECURITY NUMBER														
YES	5629	17	8649	24	16571	42	29252	71	33870	88	33541	88	127512	56
NO	18100	54	21404	59	19362	49	10174	25	3491	9	1913	5	74444	33
DONT KNOW	7740	23	4657	13	2340	6	600	1	238	1	99		15674	7
NO RESPONSE	1928	6	1617	4	1350	3	1087	3	1019	3	2448	6	9449	4
TOTALS	33397		36327		39623		41113		38618		38001		227079	

STATE-WIDE SUMMARY

57. DO YOU HAVE LEARNERS PERMIT TO DRIVE A CAR

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
YES	602	2	2346	6	8483	21	14062	34	5892	15	3988	10	35373	16
NO	30810	92	32316	89	29767	75	25898	63	31611	82	31473	83	181875	80
NO RESPONSE	1985	6	1665	5	1373	3	1153	3	1115	3	2540	7	9831	4
TOTALS	33397		36327		39623		41113		38618		38001		227079	

58. DO YOU HAVE DRIVERS LICENSE

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
YES	437	1	585	2	1133	3	13179	32	29006	75	31115	82	75455	33
NO	31064	93	34150	94	37172	94	26921	65	8748	23	4581	12	142636	63
NO RESPONSE	1896	6	1592	4	1318	3	1013	2	864	2	2305	6	8988	4
TOTALS	33397		36327		39623		41113		38618		38001		227079	

59. DO YOU HAVE CAR OF YOUR OWN

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
YES	737	2	1163	3	2016	5	4939	12	9197	24	12411	33	30463	13
NO	30742	92	33549	92	36279	92	35153	86	28538	74	23274	61	187535	83
NO RESPONSE	1918	6	1615	4	1328	3	1021	2	883	2	2316	6	9081	4
TOTALS	33397		36327		39623		41113		38618		38001		227079	

60. DO YOU DRIVE YOUR PARENTS CAR FREQUENTLY

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
YES	2675	8	4677	13	9328	24	18759	46	23974	62	22949	60	82362	36
NO	28775	86	30025	83	28942	73	21244	52	13658	35	12613	33	135257	60
NO RESPONSE	1947	6	1625	4	1353	3	1110	3	986	3	2439	6	9460	4
TOTALS	33397		36327		39623		41113		38618		38001		227079	

61. IN AN AVERAGE WEEK, (

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
DO NOT DRIVE TO SCHOOL	30325	91	33468	92	36590	92	34713	84	26535	69	20731	55	182362	80
DRIVE TO SCHOOL ONCE	402	1	476	1	540	1	1537	4	2739	7	2903	8	8597	4
DRIVE TO SCHOOL TWICE	155		153		304	1	898	2	1764	5	1879	5	5153	2
DRIVE TO SCHOOL THREE TIMES	83		120		201	1	606	1	1139	3	1212	3	3361	1
DRIVE TO SCHOOL FOUR TIMES	87		78		148		435	1	685	2	900	2	2333	1
DRIVE TO SCHOOL FIVE OR MORE TIMES	188	1	237	1	361	1	1744	4	4783	12	8002	21	15315	7
NO RESPONSE	2157	6	1795	5	1479	4	1180	3	973	3	2374	6	9958	4
TOTALS	33397		36327		39623		41113		38618		38001		227079	

62. HOURS PER WEEK WATCHING TELEVISION

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
LESS THAN 1	1267	4	1389	4	1711	4	2332	6	3160	8	3739	10	13598	6
1 TO 3	2695	8	3197	9	4542	12	6506	16	7931	21	8722	23	33593	15
4 TO 6	4848	15	5917	16	7445	19	8633	21	9087	24	8702	23	44632	20
7 TO 9	5158	15	6048	17	6779	17	7023	17	6164	16	5256	14	36428	16
10 TO 12	5383	16	5855	16	6211	16	6024	15	4844	13	4094	11	32411	14
13 TO 15	4200	13	4551	13	4632	12	3984	10	2869	7	2442	6	22678	10
16 TO 20	3331	10	3493	10	3474	9	2904	7	1934	5	1456	4	16592	7
MORE THAN 20 HOURS PER WEEK	4430	13	4116	11	3377	9	2576	6	1634	4	1162	3	17295	8
NO RESPONSE	2085	6	1761	5	1452	4	1131	3	995	3	2428	6	9852	4
TOTALS	33397		36327		39623		41113		38618		38001		227079	

STATE-WIDE SUMMARY

63. HOURS PER WEEK READING NEWSPAPER

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
LESS THAN 1	12805	38	12011	33	12011	30	10819	26	9583	25	8008	21	65237	29
1 TO 3	12678	38	15390	42	17647	45	19620	48	18882	49	18333	48	102550	45
4 TO 6	4071	12	5164	14	6257	16	7176	17	7062	18	7391	19	37121	16
7 TO 9	1172	4	1442	4	1682	4	1841	4	1754	5	1762	5	9653	4
10 TO 12	396	1	369	1	370	1	374	1	336	1	292	1	2137	1
13 TO 15	161		140		148		169		118		112		848	
16 TO 20	100		103		78		91		67		51		490	
MORE THAN 20 HOURS PER WEEK	102		117		95		85		75		54		528	
NO RESPONSE	1912	6	1591	4	1335	3	938	2	741	2	1998	5	8515	4
TOTALS	33397		36327		39623		41113		38618		38001		227079	

64. HOURS PER WEEK LISTENING TO RADIO

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
LESS THAN 1	8553	26	7090	20	6365	16	5653	14	4555	12	4119	11	36335	16
1 TO 3	8559	26	8949	25	9338	24	9425	23	8426	22	8164	21	52861	23
4 TO 6	5655	17	6519	18	7464	19	8323	20	7771	20	7432	20	43164	19
7 TO 9	3297	10	4428	12	5316	13	5508	13	5438	14	5199	14	29186	13
10 TO 12	2060	6	2802	8	3507	9	3868	9	3977	10	3967	10	20181	9
13 TO 15	1239	4	1728	5	2205	6	2523	6	2414	6	2309	6	12418	5
16 TO 20	882	3	1289	4	1635	4	1899	5	1986	5	1755	5	9446	4
MORE THAN 20 HOURS PER WEEK	1161	3	1872	5	2391	6	2908	7	3236	8	3008	8	14576	6
NO RESPONSE	1991	6	1650	5	1402	4	1006	2	815	2	2048	5	8912	4
TOTALS	33397		36327		39623		41113		38618		38001		227079	

65. HOURS PER WEEK READING MAGAZINES

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
LESS THAN 1	13931	42	13956	38	13757	35	13936	34	12743	33	12149	32	80472	35
1 TO 3	10751	32	13065	36	15579	39	16811	41	16424	43	15806	42	88436	39
4 TO 6	3975	12	4638	13	5645	14	5918	14	5581	14	5298	14	31055	14
7 TO 9	1343	4	1502	4	1713	4	1727	4	1537	4	1422	4	9244	4
10 TO 12	593	2	615	2	645	2	731	2	572	1	553	1	3709	2
13 TO 15	272	1	315	1	296	1	280	1	215	1	195	1	1573	1
16 TO 20	130		148		140		107		96		66		687	
MORE THAN 20 HOURS PER WEEK	160		157		142		128		121		71		779	
NO RESPONSE	2242	7	1931	5	1706	4	1475	4	1329	3	2441	6	11124	5
TOTALS	33397		36327		39623		41113		38618		38001		227079	

66. PLANS TO FINANCE EDUCATION BEYOND HIGH SCHOOL

	GRADE 7 N	PC	GRADE 8 N	PC	GRADE 9 N	PC	GRADE 10 N	PC	GRADE 11 N	PC	GRADE 12 N	PC	TOTAL N	PC
PARENTS SCHOLARSHIP GRANT SAV. ETC.											8783	23	8783	23
WORK OR BORROW PART OF MONEY											13163	35	13163	35
WORK OR BORROW ALL OF MONEY											5012	13	5012	13
DONT KNOW AT THIS TIME											2371	6	2371	6
DONT PLAN TO CONTINUE EDUCATION											5837	15	5837	15
NO RESPONSE											2835	7	2835	7
TOTALS											38001		38001	

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                                    STATE-WIDE SUMMARY

                       GRADE 7   GRADE 8   GRADE 9  GRADE 10  GRADE 11  GRADE 12      TOTAL
                        N   PC    N   PC    N   PC    N   PC    N   PC     N   PC      N   PC
 67. TYPE OF SCHOOL EXPECT TO ATTEND THIS FALL OR LATER

   COLLEGE
   JUNIOR COLLEGE                                                      12579  33   12579  33
   TRADE SCHOOL                                                         5025  13    5025  13
   TECHNICAL SCHOOL                                                     2981   8    2981   8
   BUSINESS SCHOOL                                                      1082   3    1082   3
   REGISTERED NURSING LESS THAN B. S.                                   2809   7    2809   7
   APPRENTICESHIP TRAINING PROGRAM                                       908   2     908   2
   HEALTH SERVICES                                                       334   1     334   1
   MILITARY SERVICE SCHOOL                                               656   2     656   2
   CORRESPONDENCE TRAINING                                              1197   3    1197   3
   DONT EXPECT TO ATTEND ANY SCHOOL                                      218   1     218   1
   NO RESPONSE                                                          7386  19    7386  19
                        TOTALS                                          2826   7    2826   7
                                                                       38001       38001
 68. WHERE DO YOU EXPECT TO GO TO SCHOOL

   DO NOT EXPECT TO GO TO SCHOOL
   HOMETOWN OR NEAR SO CAN LIVE AT HOME                                 7347  19    7347  19
   IOWA BUT AWAY FROM HO[illegible]                                     6065  16    6065  16
   OUTSIDE IOWA BUT IN MIDWESTERN STATE                                11914  31   11914  31
   IN EASTERN STATE                                                     5305  14    5305  14
   IN SOUTHERN STATE                                                     363   1     363   1
   IN WESTERN STATE                                                      448   1     448   1
   OUTSIDE THE UNITED STATES                                             880   2     880   2
   I DO NOT KNOW YET                                                      94          94
   NO RESPONSE                                                          2791   7    2791   7
                        TOTALS                                          2794   7    2794   7
                                                                       38001       38001
 69. TO HOW MANY SCHOOL APPLIED FOR ADMISSION

   NONE
   1                                                                   14354  38   14354  38
   2                                                                   15485  41   15485  41
   3                                                                    3791  10    3791  10
   4 OR MORE                                                            1378   4    1378   4
   NO RESPONSE                                                           540   1     540   1
                        TOTALS                                          2453   6    2453   6
                                                                       38001       38001
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                                                                                                    PAGE- 19
                                          STATE-WIDE SUMMARY

                                  GRADE 7    GRADE 8    GRADE 9   GRADE 10   GRADE 11   GRADE 12       TOTAL
                                   N   PC     N   PC     N   PC     N   PC     N   PC     N   PC       N   PC
70. WHAT KIND OF SCHOOL EXPECT TO ATTEND THIS FALL

  DO NOT EXPECT TO GO TO SCHOOL                                                      10396  27    10396  27
  A PUBLIC JUNIOR COLLEGE                                                             4433  12     4433  12
  A PRIVATE JUNIOR COLLEGE                                                             817   2      817   2
  PRIVATE OR DENOMINATIONAL COLL-UNIV                                                 4050  11     4050  11
  STATE COLLEGE OR UNIVERSITY                                                         8209  22     8209  22
  PUBLIC TECH OR TRADE SCHOOL                                                         3217   8     3217   8
  PRIVATE TECH OR TRADE SCHOOL                                                        2728   7     2728   7
  STATE TECH OR TRADE SCHOOL                                                          1314   3     1314   3
  NO RESPONSE                                                                         2837   7     2837   7
                   TOTALS                                                            38001        38001

71. TIMES CHANGED SCHOOLS SINCE STARTING SCHOOL

  NEVER                                                                              17974  47    17974  47
  ONCE                                                                                7195  19     7195  19
  TWICE                                                                               3261   9     3261   9
  3 TIMES                                                                             2765   7     2765   7
  4 TIMES                                                                             1599   4     1599   4
  5 OR MORE TIMES                                                                     2449   6     2449   6
  NO RESPONSE                                                                         2758   7     2758   7
                   TOTALS                                                            38001        38001
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Frequency Distributions of Relationships of Selected Variables

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Frequency Distributions of Relationships of Selected Variables

Thirteen of the seventy-one CardPac Questionnaire items were selected for additional study in the relationship to academic achievement or to pupil responses on other items in the questionnaire. The thirteen items were selected for study as (a) of strong interest to school personnel, and (b) revelatory of pupil behavior in specific school and home situations. Statistical results did not influence the selection. State summaries with comparable local school summaries were prepared for each participating school; the state summaries are also reproduced in the following pages.

THE NATURE OF THE COMMENTS

The comments accompanying the tables were prepared as a guide to the administrator in his interpretation of the pupil responses. The tables show how pupils classified at various levels of achievement responded to each of nine selected items. Two academic measures were employed in this classification. One is the mark-point average (MPA), also known as the grade-point average. This is the unweighted average of the pupil's academic marks assigned by teachers during the second semester of the 1964-65 school year as reported to the Information Center through the CardPac data collection. The other measure is the percentile rank of the pupil composite score on either the Iowa Tests of Educational Development in the fall of 1964 or the Iowa Tests of Basic Skills in January, 1965. (In general, senior high school pupils took the former battery and junior high the latter.) Questionnaire data, MPA, and percentile rank on the Iowa Tests were available for 172,789 out of the approximately 263,000 public school pupils in Grades 7-12 inclusive. The statewide data reported for these nine items are based on these 172,789 cases.

Responses on four additional items were related to a personal or environmental factor revealed by responses to another item in the questionnaire.

The analyses not only show relationships between variables, but also indicate the distribution of each variable in the Iowa secondary school population. They will enable educators to assess the possible interaction of certain demographic and scholastic aspects in the school population.

ORGANIZATION OF THE TABLES

Responses to items appear in sequence for each grade, beginning with Grade 7. The final two items were answered by Grade 12 only. Responses are listed both by number of pupils and by percent. Comments on the data and some suggested interpretations accompany the related tables.

The arrangement of data in the tables can best be explained by specific examples. Let us consider the table for Item 1 in Grade 7. This item examines the relationship of the mark-point average (MPA) to composite scores on the Iowa Tests. The pupils were classified according to MPA into five groups of 0.00-1.54, 1.55-2.04, 2.05-2.54, 2.55-3.04, and 3.05-4.00, respectively. The 2,209 cases withMPA's of 0.00-1.54 were then sorted according to composite percentile score in either the ITBS or the ITED, and the percent of this subgroup falling into each of five score categories was determined. The table indicates that 1,660, or 43 percent, of the pupils with ranks of 20 or below on the Iowa Tests had MPA's of 1.54 or below. Twenty-four percent (4,569 cases) of the entire state sample fall into the 2.05-2.54 MPA category (third vertical "N" column). Twenty-three percent (4,347) of the pupils had earned percentile scores in the 61-80 range on the Iowa Tests (fourth horizontal row of figures). In all, the data on 19,143 pupils were used in this analysis of the MPA-Iowa Test score relationship in Grade 7.

Item 2, analyzed on the same page, is concerned with the relationship between the marital status of parents and the academic performance of the pupils, as measured by two variables, by MPA left of the "Totals" column and by Iowa Test score percentile at the right. The third row in the MPA table shows that among the 766 seventh-grade children of divorced parents, 24 percent earned MPA's of 2.05-2.54. To the right in the same row, the test score comparison shows that 133 (17 percent) of these same children had percentile scores of 41-60 on the Iowa Tests.

It is important to note that, within the body of each table, the percents given are percentages of the *row* totals. For example, under Item 1, 1,660 is 43 percent of 3,872 (reading across), not of 2,209 (reading down). The only percents that may be added vertically are those in the "Totals" column. Percents for a particular row may not sum to exactly one hundred because of rounding error.

Trends in the data are generally reflected by a gradual change in the percents across a row or on a diagonal from one corner of a table to the opposite corner. For example, in the data for Item 1, as one moves across the first row of figures from left to right, the per cent of pupils decreases from one category of the MPA to the next. In the fifth row (pupils with percentile scores from 81 to 100) the percent increases from level to level of the MPA. This indicates a generally positive relationship between mark-point average and percentile rank on the Iowa Tests. The relationship is not perfect, of course. There are some pupils who rank well in the testing program but receive low marks in their school work. Conversely, some who have high mark averages do not achieve as highly on the standardized tests.

Some discrepancies may appear to exist in numbers and percents on apparently related items. One example appears in the number of pupils indicating car ownership in Items 7 and 8. Some schools failed to report academic marks in usable form and their pupils are not included in the total population for items comparing mark-point averages. Other minor discrepancies in populations may be traced to pupil errors in marking cards.

INTERPRETATION OF THE DATA

Some reasonable interpretations of the state summaries are offered. These are neither comprehensive nor all-inclusive. Interested readers will undoubtedly observe trends which are not considered in these comments. In some cases a variety of interpretations of the data may be possible. Consideration of alternative explanations of the trends should have the salutary effect of provoking further exploration into the causes and implications of the relationships examined here.

Items 1, 2 and 3

1. Mark-Point Average Related to Iowa Testing Program Scores

The generally positive relationship between MPA and Iowa Test score has already been noted in the preceding section of the report. Such a trend is to be expected. At the same time, it is interesting to speculate upon why pupils who scored in the top 20 percent on the Iowa Tests have MPA's no higher than 2.04. Local pupils evidencing such a discrepancy constitute a provocative challenge to school personnel.

School officials will be interested in comparing their local reports with the state summary. Some may find a higher, and some a lower, relationship between these two academic measures locally. That is, the percents in the local table may change more rapidly or more gradually than in the state table. Differences in local grading practices or unusual heterogeneity or homogeneity in the local student population may account for some variations of this kind. Lack of a close correspondence between the curriculum and the content of the Iowa Tests may also affect comparisons with the state norms in some school districts.

The general level of achievement of local pupils and the degree of variation among local pupils, in comparison to the state as a whole, may be inferred from the corresponding percents in the two columns of Totals. For example, if the local table indicates that 30 percent of the pupils have percentile scores of 81-100 and only 5 percent have scores in the range 01-20, the local pupils, as a group, are clearly above average. The comparison of the local and state distributions of marks, that is, the percents in the five MPA categories, should reflect this superiority. It is not assumed, of course, that any student who obtains a high test score must necessarily get high marks. For a fairly large class, however, one might expect similar trends among grades and test scores. If, for example, local pupils are above average in comparison to the state as a whole on the tests, there is some justification for giving a relatively large proportion of high marks in the local system. Where local test scores and marks reveal contradictory trends in relation to the state as a whole, local marking practices may be too lenient or too stringent. At least local school personnel may wish to examine this possibility.

Local schools may also find their results useful in approximating an expected MPA for incoming pupils whose Iowa Test scores are known. Such information may be especially useful in schools that practice ability grouping.

Again, school personnel should be cautioned against over-interpreting their results. Year-by-year fluctuations can be considerable in small groups of pupils. Schools with small enrollments are advised to cumulate their results over a number of years before seeking reliable trends.

2. Marital Status of Parents Related to Mark-Point Average and Iowa Testing Program Scores

There has been much interest in our society in the relation between school achievement and marital status of parents. It is quite commonly believed that pupils from homes in which the parents are living together might, on the average, do better scholastically than pupils whose parents are living apart, are divorced, or are deceased. To some extent this expectation is supported by the state data. The percents of pupils from broken homes who fall in the lowest two MPA categories are greater than the percents of pupils from "intact" homes who fall in these categories. At the high end of MPA scale one sees that, in Grade 7, 19 percent of the pupils classified in the "Married-Together" category have 3.05 to 4.00 averages, while 5 to 13 percent of pupils in the other marital status categories are in this MPA category. The same trend is indicated in the relationship to Iowa Test scores at the extremes of the scale. However, in both sets of data, the trend is not strong and is clearly discernible only for the extreme groups in achievement. It will also be of interest to note that 91 percent of the pupils reported that their parents were married and together. That is, only 9 percent of the pupils were from homes that could be described as "broken."

3. Time Spent Doing Homework Related to Mark-Point Average and Iowa Testing Program Scores

One might suppose that pupils who spend more time doing homework would also have the higher mark-point averages and test scores. On the other hand, the more capable students may not need to spend as much time doing homework. In the Item 3 analysis, a definite relationship is found between the amount of time spent on homework and MPA or Iowa Test Score. That is, as the amount of homework done increases, there tends to be a concomitant increase in MPA. Stated another way, the better pupils indicated more time spent on homework than did the poorer pupils. The same relationship is observed between time spent doing homework and achievement test scores. These results pose some interesting questions, such as, does intensive studying actually improve achievement or is it simply a characteristic of those pupils who achieve highly?

It will also be of interest to note that the relationships observed in the Grade 7 table become stronger in the tables for Grades 8-12. That is, increases in homework parallel increases in the mark average to a greater degree at the twelfth-grade level than at the seventh. Perhaps twelfth-grade pupils who have achieved rather poorly (as measured by MPA) have become skeptical of the value of doing homework, while pupils who have achieved high average marks have become even more convinced that the extra study is worthwhile. One might argue that those who achieve poorly in the lower grades are negatively conditioned to studying when they reach senior high school, while the high achievers are positively conditioned to studying (or, for that matter, to anything connected with school). One might wonder, also, whether the former group may be more susceptible to other distractions that interfere with homework. It may be worth noting, with respect to these data, that the questionnaire was administered close to the end of the school year. Because of approaching final examinations, students may have been devoting more hours to homework than they had during earlier months in the school year.

The local reports for Item 3 may suggest a need for review of policies regarding homework. Some administrators, upon examining the tables, may feel that they are assigning too much or too little homework for the given grade levels. The data may also suggest the desirability of pursuing a local study of the matter. School guidance counselors or principals may desire to investigate the effect of homework within a narrower range of averages or test scores. In this manner they may be able to assess the effect of homework for students at a particular ability level.

CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 7

1. MARK POINT AVERAGE RELATED TO IOWA TESTING PROGRAM SCORES

ITBS-ITED PERCENTILE SCORE	**MPA** 0.00- 1.54		1.55- 2.04		2.05- 2.54		2.55- 3.04		3.05- 4.00		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
01-20	1660	43	1523	39	580	15	101	3	8		3872	20
21-40	409	12	1386	41	1077	32	422	13	48	1	3342	17
41-60	114	3	872	23	1532	40	1087	28	216	6	3821	20
61-80	26	1	332	8	1113	26	1893	44	983	23	4347	23
81-100			44	1	267	7	1157	31	2293	61	3761	20
TOTALS	2209	12	4157	22	4569	24	4660	24	3548	19	19143	100

2. MARITAL STATUS OF PARENTS RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

STATUS	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
MARRIED-TOGETHER	1835	11	3680	21	4082	24	4278	25	3322	19	17197	91	3274	19	2971	17	3481	20	3974	23	3497	2
MARRIED-LIVE APART	48	26	60	33	45	24	22	12	9	5	184	1	84	46	32	17	25	14	22	12	21	1
DIVORCED	168	22	207	27	186	24	127	17	78	10	766	4	260	34	165	22	133	17	121	16	87	1
FATHER DECEASED	75	15	118	24	133	27	103	21	66	13	495	3	112	23	96	19	102	21	104	21	81	1
MOTHER DECEASED	25	18	33	24	32	23	35	25	14	10	139	1	43	31	15	11	25	18	37	27	19	1
BOTH DECEASED	8	32	5	20	3	12	6	24	3	12	25		9	36	3	12	5	20	7	28	1	4
TOTALS	2159	11	4103	22	4481	24	4571	24	3492	19	18806	100	3782	20	3282	17	3771	20	4265	23	3706	2

3. TIME SPENT DOING HOMEWORK RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

HOURS	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
NONE	277	19	395	27	349	24	269	18	168	12	1458	8	475	33	249	17	268	18	228	16	238	1
1-4	1281	13	2459	24	2517	25	2370	23	1566	15	10193	54	2309	23	1904	19	2039	20	2194	22	1747	1
5-9	435	8	960	18	1226	23	1426	27	1222	23	5269	28	712	14	847	16	1121	21	1347	26	1242	2
10-14	119	8	232	16	300	20	422	28	419	28	1492	8	208	14	222	15	274	18	404	27	384	2
15 OR MORE	44	12	56	15	84	22	78	21	116	31	378	2	73	19	59	16	62	16	87	23	97	2
TOTALS	2156	11	4102	22	4474	24	4565	24	3491	19	18790	100	3777	20	3281	17	3764	20	4260	23	3708	2

CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 8

1. MARK POINT AVERAGE RELATED TO IOWA TESTING PROGRAM SCORES

ITBS-ITED PERCENTILE SCORE	**MPA** 0.00- 1.54		1.55- 2.04		2.05- 2.54		2.55- 3.04		3.05- 4.00		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
01-20	2204	38	2142	37	1012	17	389	7	52	1	5799	23
21-40	662	13	1780	35	1604	32	773	15	199	4	5018	20
41-60	193	4	977	21	1630	36	1350	29	427	9	4577	18
61-80	94	1	414	8	1392	26	2156	40	1314	25	5370	21
81-100	2		66	1	399	8	1418	29	3030	62	4915	19
TOTALS	3115	12	5379	21	6037	24	6086	24	5022	20	25679	100

2. MARITAL STATUS OF PARENTS RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

STATUS	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
MARRIED-TOGETHER	2528	11	4624	20	5323	24	5504	24	4653	21	22632	89	4767	21	4345	19	4101	18	4857	21	4562	20
MARRIED-LIVE APART	77	23	85	26	79	24	52	16	35	11	328	1	143	44	70	21	50	15	43	13	22	7
DIVORCED	245	19	349	26	310	24	252	19	162	12	1318	5	457	35	303	23	196	15	209	16	153	12
FATHER DECEASED	152	20	187	25	167	22	160	21	97	13	763	3	213	28	175	23	125	16	144	19	106	14
MOTHER DECEASED	38	16	57	25	64	28	50	22	22	10	231	1	69	30	57	25	45	19	31	13	29	13
BOTH DECEASED	9	24	10	26	8	21	7	18	4	11	38		13	34	11	29	7	18	1	3	6	16
TOTALS	3049	12	5312	21	5951	24	6025	24	4973	20	25310	100	5662	22	4961	20	4524	18	5285	21	4878	19

3. TIME SPENT DOING HOMEWORK RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

HOURS	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
NONE	484	23	577	28	499	24	332	16	186	9	2078	8	804	39	447	22	302	15	301	14	224	11
1-4	1770	14	3014	24	3134	25	2873	22	1990	16	12781	51	3283	26	2677	21	2306	18	2454	19	2061	16
5-9	603	8	1345	18	1760	23	2074	27	1863	24	7645	30	1167	15	1401	18	1436	19	1851	24	1790	23
10-14	144	7	300	14	462	21	598	27	694	32	2198	9	329	15	348	16	364	17	553	25	604	27
15 OR MORE	43	8	62	11	100	18	137	24	229	40	571	2	76	13	80	14	105	18	117	20	193	34
TOTALS	3044	12	5298	21	5955	24	6014	24	4962	20	25273	100	5659	22	4953	20	4513	18	5276	21	4872	19

CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 9

1. MARK POINT AVERAGE RELATED TO IOWA TESTING PROGRAM SCORES

	MPA											
ITBS-ITED PERCENTILE SCORE	0.00- 1.54		1.55- 2.04		2.05- 2.54		2.55- 3.04		3.05- 4.00		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
01-20	2123	40	2055	38	891	17	243	5	35	1	5347	18
21-40	979	17	2120	38	1581	28	838	15	129	2	5647	19
41-60	413	7	1583	26	1938	32	1668	28	447	7	6049	21
61-80	135	2	811	12	1770	26	2518	37	1525	23	6759	23
81-100	36	1	158	3	622	12	1598	30	2922	55	5336	18
TOTALS	3686	13	6727	23	6802	23	6865	24	5058	17	29138	100

2. MARITAL STATUS OF PARENTS RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

	MPA												**ITBS-ITED PERCENTILE SCORE**									
STATUS	0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
MARRIED-TOGETHER	3065	12	5831	23	6035	23	6244	24	4680	18	25855	90	4570	18	4951	19	5367	21	6089	24	4878	19
MARRIED-LIVE APART	56	23	72	29	60	24	42	17	18	7	248	1	73	29	63	25	50	20	36	15	26	10
DIVORCED	250	21	336	28	286	24	203	17	122	10	1197	4	294	25	265	22	263	22	233	19	142	12
FATHER DECEASED	180	18	245	25	204	21	205	21	139	14	973	3	207	21	178	18	216	22	212	22	160	16
MOTHER DECEASED	40	14	78	28	65	23	67	24	32	11	282	1	64	23	80	28	51	18	56	20	31	11
BOTH DECEASED	15	29	14	27	11	21	7	13	5	10	52		18	35	11	21	9	17	10	19	4	8
TOTALS	3606	13	6576	23	6661	23	6768	24	4996	17	28607	100	5226	18	5548	19	5956	21	6636	23	5241	18

3. TIME SPENT DOING HOMEWORK RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

	MPA												**ITBS-ITED PERCENTILE SCORE**									
HOURS	0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
NONE	593	21	881	31	624	22	515	18	242	8	2855	10	782	27	621	22	552	19	535	19	365	13
1-4	2052	15	3649	26	3392	24	3071	22	1840	13	14004	49	2922	21	2970	21	2977	21	2988	21	2147	15
5-9	741	9	1593	19	2002	24	2298	27	1765	21	8399	29	1133	13	1478	18	1809	22	2203	26	1776	21
10-14	179	7	378	14	539	20	734	27	857	32	2687	9	319	12	409	15	518	19	707	26	734	27
15 OR MORE	43	1	68	11	103	16	145	22	287	44	646	2	69	11	68	11	99	15	200	31	210	33
TOTALS	3608	13	6569	23	6660	23	6763	24	4991	17	28591	100	5225	18	5546	19	5955	21	6633	23	5232	18

CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 10

1. MARK POINT AVERAGE RELATED TO IOWA TESTING PROGRAM SCORES

ITBS-ITED PERCENTILE SCORE	**MPA** 0.00- 1.54		1.55- 2.04		2.05- 2.54		2.55- 3.04		3.05- 4.00		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
01-20	2957	45	2373	37	887	14	251	4	33	1	6501	19
21-40	1260	20	2496	40	1656	26	740	12	125	2	6285	18
41-60	593	9	1814	29	2003	32	1534	24	401	6	6345	18
61-80	273	3	1163	15	2153	27	2837	36	1500	19	7926	23
81-100	53	1	294	4	830	11	2254	31	3902	53	7333	21
TOTALS	5136	15	8140	24	7529	22	7624	22	5961	17	34390	100

2. MARITAL STATUS OF PARENTS RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

STATUS	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
MARRIED-TOGETHER	4216	14	7052	23	6711	22	6921	23	5480	18	30380	89	5508	18	5500	18	5618	18	7092	23	6662	22
MARRIED-LIVE APART	91	30	90	29	50	16	51	17	25	8	307	1	93	30	63	21	53	17	74	24	24	8
DIVORCED	393	26	443	29	320	21	242	16	136	9	1534	5	400	26	324	21	275	18	307	20	228	15
FATHER DECEASED	217	17	331	26	268	21	260	20	203	16	1279	4	276	22	242	19	236	18	266	21	259	20
MOTHER DECEASED	83	21	89	23	82	21	77	20	57	15	388	1	83	21	73	19	69	18	92	24	71	18
BOTH DECEASED	16	24	21	31	17	25	6	9	8	12	68		24	35	7	10	15	22	11	16	11	16
TOTALS	5016	15	8026	24	7448	22	7557	22	5909	17	33956	100	6384	19	6209	18	6266	18	7842	23	7255	21

3. TIME SPENT DOING HOMEWORK RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

HOURS	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	RC	N	PC	N	PC	N	PC	N	PC	N	PC
NONE	799	27	896	30	597	20	454	15	200	7	2946	9	864	29	643	22	493	17	529	18	417	14
1-4	2784	18	4182	28	3547	23	2992	20	1640	11	15145	45	3497	23	3174	21	2911	19	3185	21	2378	16
5-9	1077	10	2242	21	2422	23	2702	26	2149	20	10592	31	1474	14	1734	16	2029	19	2734	26	2621	25
10-14	275	7	591	15	706	18	1110	28	1337	33	4019	12	425	11	529	13	667	17	1049	26	1349	34
15 OR MORE	72	6	114	9	167	14	296	24	580	47	1229	4	120	10	125	10	158	13	343	28	483	39
TOTALS	5007	15	8025	24	7439	22	7554	22	5906	17	33931	100	6380	19	6205	18	6258	18	7840	23	7248	21

CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 11

1. MARK POINT AVERAGE RELATED TO IOWA TESTING PROGRAM SCORES

ITBS-ITED PERCENTILE SCORE	**MPA** 0.00- 1.54		1.55- 2.04		2.05- 2.54		2.55- 3.04		3.05- 4.00		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
01-20	2624	39	2573	38	1094	16	386	6	31		6708	21
21-40	1066	16	2399	35	1938	28	1190	17	243	4	6836	21
41-60	384	7	1297	22	1732	29	1829	31	634	11	5876	18
61-80	196	3	865	12	1642	23	2609	37	1731	25	7043	22
81-100	49	1	236	4	610	10	1757	30	3301	55	5953	18
TOTALS	4319	13	7370	23	7016	22	7771	24	5940	18	32416	100

2. MARITAL STATUS OF PARENTS RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

STATUS	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
MARRIED-TOGETHER	3560	12	6337	22	6142	22	7000	25	5448	19	28487	89	5647	20	5892	21	5222	18	6330	22	5396	19
MARRIED-LIVE APART	80	27	85	28	59	20	52	17	25	8	301	1	106	35	74	25	47	16	54	18	20	7
DIVORCED	278	20	371	27	306	22	260	19	150	11	1365	4	373	27	343	25	234	17	241	18	174	13
FATHER DECEASED	221	17	341	26	298	22	263	20	208	16	1331	4	314	24	320	24	215	16	247	19	235	18
MOTHER DECEASED	75	18	115	27	92	22	91	22	48	11	421	1	127	30	102	24	70	17	71	17	51	12
BOTH DECEASED	11	14	24	31	22	28	12	15	9	12	78		28	36	18	23	12	15	12	15	8	10
TOTALS	4225	13	7273	23	6919	22	7678	24	5888	18	31983	100	6595	21	6749	21	5800	18	6955	22	5884	18

3. TIME SPENT DOING HOMEWORK RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

HOURS	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
NONE	692	25	912	33	548	20	471	17	149	5	2772	9	880	32	675	24	480	17	452	16	285	10
1-4	2227	17	3640	27	3121	24	2812	21	1469	11	13269	42	3409	26	3149	24	2385	18	2549	19	1777	13
5-9	1015	10	2069	20	2290	22	2822	27	2128	21	10324	32	1673	16	2112	20	2017	20	2441	24	2081	20
10-14	247	6	547	13	767	19	1197	29	1387	33	4145	13	509	12	675	16	698	17	1115	27	1148	28
15 OR MORE	43	3	99	7	188	13	377	26	754	52	1461	5	127	9	130	9	219	15	396	27	589	40
TOTALS	4224	13	7267	23	6914	22	7679	24	5887	18	31971	100	6598	21	6741	21	5799	18	6953	22	5880	18

CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 12

1. MARK POINT AVERAGE RELATED TO IOWA TESTING PROGRAM SCORES

ITBS-ITED PERCENTILE SCORE	**MPA** 0.00-1.54		1.55-2.04		2.05-2.54		2.55-3.04		3.05-4.00		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
01-20	1532	27	2295	40	1116	20	634	11	103	2	5680	18
21-40	585	10	1701	28	1826	31	1458	24	401	7	5971	19
41-60	321	4	1304	17	2065	27	2563	34	1261	17	7514	23
61-80	108	2	573	9	1171	18	2279	36	2219	35	6350	20
81-100	38	1	213	3	540	8	1718	26	4019	62	6528	20
TOTALS	2584	8	6086	19	6718	21	8652	27	8003	25	32043	100

2. MARITAL STATUS OF PARENTS RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

STATUS	**MPA** 0.00-1.54		1.55-2.04		2.05 2.54		2.55-3.04		3.05-4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
MARRIED-TOGETHER	2032	8	4922	18	5560	21	7360	27	6944	26	26818	88	4621	17	4919	18	6336	24	5382	20	5560	21
MARRIED-LIVE APART	45	17	72	27	55	21	45	17	48	18	265	1	72	27	61	23	63	24	36	14	33	12
DIVORCED	134	10	329	25	312	24	325	25	211	16	1311	4	269	21	289	22	324	25	230	18	199	15
FATHER DECEASED	168	10	356	21	368	22	406	24	368	22	1666	5	317	19	324	19	368	22	330	20	327	20
MOTHER DECEASED	49	12	80	19	95	23	116	28	74	18	414	1	86	21	91	22	86	21	76	18	75	18
BOTH DECEASED	11	14	23	29	17	22	11	14	17	22	79		28	35	18	23	13	16	14	18	6	8
TOTALS	2439	8	5782	19	6407	21	8263	27	7662	25	30553	100	5393	18	5702	19	7190	24	6068	20	6200	20

3. TIME SPENT DOING HOMEWORK RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

HOURS	**MPA** 0.00-1.54		1.55-2.04		2.05 2.54		2.55-3.04		3.05-4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
NONE	414	14	839	28	744	25	674	23	319	11	2990	10	799	27	700	23	675	23	470	16	346	12
1-4	1282	10	2867	23	2933	24	3152	25	2172	18	12406	41	2718	22	2646	21	2962	24	2228	18	1852	15
5-9	539	6	1469	16	1919	20	2864	30	2655	28	9446	31	1310	14	1617	17	2335	25	2039	22	2145	23
10-14	154	4	430	11	607	15	1144	29	1655	41	3990	13	407	10	546	14	892	22	936	23	1209	30
15 OR MORE	29	2	99	7	134	10	333	24	780	57	1375	5	108	8	132	10	252	18	321	23	562	41
TOTALS	2418	8	5704	19	6337	21	8167	27	7581	25	30207	100	5342	18	5641	19	7116	24	5994	20	6114	20

Items 4, 5, 6 and 7

4. Extracurricular Participation Related to Mark-Point Average and Iowa Testing Program Scores

Does participation in many activities lower total achievement as measured by mark-point average or by composite scores on the Iowa Tests? Do the better pupils tend to participate in more activities than the poorer pupils? Item 4 attempts to shed some light on such questions. The state summaries indicate that as school marks or test scores rise, the activity level tends also to rise somewhat. However, this relationship is not clear cut. The "composite activity level" derived for each student is based on the number of activities in which the student engaged, weighted according to the degree of his participation in each activity. One can see that the intervals used in the distributions were too large to reveal the variability of pupil activity. In the eleventh grade, for example, 55 percent of the pupils fell in the activity level category of 00-19. Less than 1 percent fell in the category of 80-100. Perhaps if smaller intervals were employed, a stronger relationship between activities and school achievement would emerge. Of course, one of the factors affecting the pupil's computed activity level is the number of activities offered by his school. Variations in this factor exist among grade levels as well as among schools. Another possible factor, the distance of the pupil's home from the school, is explored in the tables for Item 11.

5. Time Spent Working Related to Mark-Point Average and Iowa Testing Program Scores

Students are often encouraged to work and earn their own spending money. However, extensive outside work can adversely affect their school achievement. In general, one would expect to find that as the number of hours worked increased, a decrease would be observed in the measures of scholastic attainment. That is, students working 40 or more hours per week would be expected to make much lower mark averages than students working 0 to 9 hours a week. The statewide summary for Item 5 in Grade 7 does support such an assumption. In the tables for the higher grades, the inverse relationship of hours worked to grades earned is even more marked. For example, in Grade 7, 17 percent of the pupils in the MPA 0.00-1.54 category worked 40 or more hours per week, while 11 percent worked 00-09 hours—a difference of 6 percent. For Grade 12 the corresponding difference is 8 percent. In the highest MPA category (3.05-4.00) there is a difference of 14 percent from top to bottom of the work hours distribution for Grade 7 and of 22 percent for Grade 12. Part of this increase undoubtedly is attributable to the fact that more twelfth-graders than seventh-graders have jobs. This is borne out by the Totals column, which indicates that 54 percent of the pupils in Grade 7 do little or no work (0 to 9 hours per week), whereas, in the twelfth grade only 38 percent of the students are in that category.

The relationship between school marks and hours worked should be of interest to guidance counselors, principals, and teachers. However, it should be pointed out that the relationship observed might be influenced by other factors. Socio-economic status of parents, family size, and other environmental conditions may have a bearing, both upon the pupil's achievement in school and upon whether or not he works.

Again it is expected that local tables will show considerable deviation from the state tables, since the reported hours included those worked without pay as well as those worked for pay. Some communities will show a much higher distribution of pupil work hours than others. One would particularly expect that communities in which a large proportion of the pupils are from farm families would show a much higher proportion of pupils working 30 to 40 hours or more per week.

6. Educational Aspirations Related to Mark-Point Average and Iowa Testing Program Scores

Educators generally assume a close tie between pupil interest in education and school achievement. Hence, it is of interest to learn just how many of the high achievers do *not* want to continue their education beyond high school, and how many of the low achievers do. Guidance personnel in particular can apply such information in gauging the appropriateness of student aspirations within their own school systems.

The statewide summary for Item 6 does, in fact, indicate a rather strong relationship between educational aspirations and achievement. There are deviations from the trend, however. At the Grade 7 level, for instance, approximately 4 percent of the pupils in the lowest MPA category (0.00-1.54) want college degrees. If these data are accurate, it seems that a considerable number of pupils (321 to be exact) at the seventh-grade level are not being realistic about their future education. One would expect the proportion of unrealistic pupils to drop sharply by Grade 12. However, one finds that 518 (three percent of the seniors in the low MPA group aspire to college graduation or above.

The tables for Item 6 show an increase of 9 percent from Grade 7 to 12 in the *total* number of pupils who marked "college graduation and above." An identical increase occurs in the percent of pupils who are planning technical, trade, or business school education beyond the high school level. The proportion in this category increases from 11 percent of the total in Grade 7 to 20 percent in Grade 12. With the advent of area vocational schools in Iowa, it is possible that over the next few years we may see a significant increase at all grade levels in the number of pupils planning for vocational, technical, trade, and business school education.

It is probable that the local distributions will reflect the emphasis within the community and the school on training beyond the high school level. Communities which have technical schools nearby might be expected to show an unusually large proportion of pupils interested in this type of education. Again, however, caution should be used in observing percents based on a small number of pupils.

7. Car Ownership Related to Mark-Point Average and Iowa Testing Program Scores

Does owning a car relate significantly to classroom marks or standardized test achievement? Considerable controversy has arisen about this question from time to time. Some schools have gone so far as to prohibit student driving. Others have said that ownership of a car does not necessarily affect achievement. In Item 7 an attempt has been made to answer this question.

At the seventh-grade level, of course, the question is hardly applicable, since very few pupils are yet of driving age. However, at the twelfth-grade level 34 percent of the pupils have a car which they regard as their own. The percentage of car owners in the low MPA group is twice as large as the percentage of non-owners. Conversely, in the highest MPA group, the percent of pupils not owning a car is much higher than the percent of pupils who do. One cannot, however, safely interpret these results as meaning that car ownership *causes* poor achievement in school. Rather, it is possible that the relation observed simply reflects the effects of other (and perhaps more important) factors—for example, socio-economic level of parents, cultural attitudes prevalent in the home and family, permissiveness of local school policy, and so on.

The local results for Item 7 may yield interesting comparisons with the state summaries. In indicating the exact extent of car ownership among the pupils, the local data may be of specific use in the setting of school policies concerning cars. Schools with limited parking facilities may be able to draw some conclusions about the need for applying or reducing restrictions on the basis of these results.

CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 7

4. EXTRA CURRICULAR PARTICIPATION RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

COMPUTED ACTIVITY LEVEL	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	RC	N	PC	N	PC	N	PC	N	PC	N	PC
80-100	3	21	5	36	4	29	1	7	1	7	14		6	43	5	36	1	7	1	7	1	7
60-79	16	12	25	18	33	24	31	23	31	23	136	1	32	24	23	17	28	21	33	24	20	15
40-59	116	8	229	17	314	23	360	26	351	26	1370	7	245	18	176	13	279	20	340	25	330	24
20-39	586	8	1230	18	1621	23	1924	28	1635	23	6996	37	1040	15	1154	16	1386	20	1697	24	1719	25
00-19	1488	14	2668	25	2557	24	2344	22	1530	14	10627	56	2549	24	1984	19	2127	20	2276	21	1691	16
TOTALS	2209	12	4157	22	4569	24	4660	24	3548	19	19143	100	3872	20	3342	17	3821	20	4347	23	3761	20

5. TIME SPENT WORKING RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

HOURS WORKING PER WEEK	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	RC	N	PC	N	PC	N	PC	N	PC	N	PC
40 OR MORE	60	17	83	24	100	29	79	23	25	7	347	2	97	28	72	21	73	21	76	22	29	8
30-39	97	14	194	29	164	24	147	22	74	11	676	4	165	23	137	20	146	22	154	23	84	12
20-29	368	12	744	24	811	26	712	23	449	15	3064	16	627	20	569	18	683	22	699	23	506	16
10-19	518	11	964	21	1082	24	1135	25	825	18	4524	24	815	18	809	18	919	20	1071	24	910	20
00-09	1113	11	2103	21	2322	23	2482	25	2109	21	10129	54	2083	21	1688	17	1941	19	2249	22	2168	21
TOTALS	2156	11	4088	22	4479	24	4555	24	3482	19	18760	100	3777	20	3275	17	3762	20	4249	23	3697	20

6. EDUCATIONAL ASPIRATIONS RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

ED. PLANS	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
HIGH SCHOOL-LESS	956	29	1207	36	748	22	348	10	80	2	3339	18	1609	48	831	25	561	17	272	8	66	2
JOB OR MIL. TRNG.	432	21	668	33	503	25	334	16	112	5	2049	11	680	33	483	24	408	20	334	16	144	7
TECH-TRADE-BUS SCH	208	10	489	25	547	27	498	25	253	13	1995	11	360	18	404	20	482	24	482	24	267	13
COLL.-2 YRS.-LESS	196	8	526	23	722	31	608	26	259	11	2311	12	398	17	534	23	589	25	550	24	240	10
COLL. GRAD.-ABOVE	321	4	1183	13	1936	22	2759	31	2777	31	8976	48	678	8	997	11	1711	19	2609	29	2981	33
TOTALS	2113	11	4073	22	4456	24	4547	24	3481	19	18670	100	3725	20	3249	17	3751	20	4247	23	3698	20

7. CAR OWNERSHIP RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

OWNERSHIP STATUS	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	RC	N	PC	N	PC	N	PC	N	PC	N	PC
OWNING A CAR	111	29	126	33	71	19	55	14	18	5	381	2	144	38	84	22	69	18	56	15	28	7
NOT OWNING A CAR	1955	11	3900	21	4354	24	4487	25	3446	19	18142	98	3506	19	3132	17	3657	20	4179	23	3668	20
TOTALS	2066	11	4026	22	4425	24	4542	25	3464	19	18523	100	3650	20	3216	17	3726	20	4235	23	3696	20

CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 8

4. EXTRA CURRICULAR PARTICIPATION RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

	MPA												**ITBS-ITED** PERCENTILE SCORE									
COMPUTED ACTIVITY LEVEL	0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	RC	N	PC	N	PC	N	PC	N	PC	N	PC
80-100	8	29	5	18	5	18	7	25	3	11	28		13	46	5	18	2	7	6	21	2	7
60-79	11	7	21	13	31	19	52	31	51	31	166	1	33	20	33	20	21	13	43	26	36	22
40-59	116	6	184	10	340	19	495	27	670	37	1805	7	261	14	273	15	277	15	423	23	571	32
20-39	648	7	1444	16	2100	23	2507	28	2375	26	9074	35	1397	15	1579	17	1705	19	2127	23	2266	25
00-19	2332	16	3725	26	3561	24	3025	21	1923	13	14566	57	4095	28	3128	21	2572	18	2731	19	2040	14
TOTALS	3115	12	5379	21	6037	24	6086	24	5022	20	25639	100	5799	23	5018	20	4577	18	5330	21	4915	19

5. TIME SPENT WORKING RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

	MPA												**ITBS-ITED** PERCENTILE SCORE									
HOURS WORKING PER WEEK	0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	RC	N	PC	N	PC	N	PC	N	PC	N	PC
40 OR MORE	120	21	142	25	119	21	127	23	52	9	560	2	193	34	117	21	103	18	91	16	56	10
30-39	151	16	239	26	237	25	186	20	122	13	935	4	254	27	207	22	211	23	166	18	97	10
20-29	550	13	993	24	967	23	987	24	641	15	4138	16	936	23	889	21	803	19	894	22	616	15
10-19	721	12	1306	21	1523	24	1532	24	1187	19	6269	25	1248	20	1223	20	1210	19	1372	22	1216	19
00-09	1503	11	2608	20	3096	23	3167	24	2948	22	13322	53	3015	23	2506	19	2188	16	2735	21	2878	22
TOTALS	3045	12	5288	21	5942	24	5999	24	4950	20	25224	100	5646	22	4942	20	4515	18	5258	21	4863	19

6. EDUCATIONAL ASPIRATIONS RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

	MPA												**ITBS-ITED** PERCENTILE SCORE									
ED. PLANS	0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	RC	N	PC	N	PC	N	PC	N	PC	N	PC
HIGH SCHOOL-LESS	1302	33	1377	35	810	21	375	10	83	2	3947	16	2280	58	935	24	464	12	222	6	46	1
JOB OR MIL. TRNG.	527	22	780	32	618	25	372	15	136	6	2433	10	905	37	651	27	399	16	332	14	146	6
TECH-TRADE-BUS SCH	442	13	888	26	935	28	711	21	388	12	3364	13	746	22	875	26	727	22	685	20	331	10
COLL.-2 YRS.-LESS	277	10	717	26	832	31	631	23	255	9	2712	11	640	24	751	28	638	24	482	18	201	7
COLL. GRAD.-ABOVE	455	4	1470	12	2730	22	3899	31	4102	32	12656	50	985	8	1713	14	2271	18	3540	28	4147	33
TOTALS	3003	12	5232	21	5925	24	5988	24	4964	20	25112	100	5556	22	4925	20	4499	18	5261	21	4871	19

7. CAR OWNERSHIP RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

	MPA												**ITBS-ITED** PERCENTILE SCORE									
OWNERSHIP STATUS	0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	RC	N	PC	N	PC	N	PC	N	PC	N	PC
OWNING A CAR	255	30	243	28	198	23	115	13	47	5	858	3	362	42	180	21	140	16	109	13	67	8
NOT OWNING A CAR	2698	11	4938	21	5639	24	5808	24	4862	20	23945	97	5071	21	4667	19	4312	18	5116	21	4779	20
TOTALS	2953	12	5181	21	5837	24	5923	24	4909	20	24803	100	5433	22	4847	20	4452	18	5225	21	4846	20

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                 CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

          STATE-WIDE SUMMARY                              GRADE  9

  4. EXTRA CURRICULAR PARTICIPATION RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES
                                          **MPA**                                                     **ITBS-ITED**
    COMPUTED              0.00-      1.55-      2.05       2.55-      3.05-                          PERCENTILE SCORE
  ACTIVITY LEVEL          1.54       2.04       2.54       3.04       4.00        TOTALS      01-20      21-40      41-60      61-80      81-100
                          N   PC     N   PC     N   PC     N   PC     N   PC     N    RC      N   PC     N   PC     N   PC     N   PC     N   PC
     80-100               6   32     7   37     1    5     3   16     2   11     19            8  42     2  11     4  21     3  16     2  11
     60-79               20   11    22   12    33   18    56   30    54   29     185    1     31  17    20  11    23  12    53  29    58  31
     40-59               98    4   262   12   432   20   668   31   724   33    2184    7    222  10   269  12   419  19   610  28   664  30
     20-39              760    7  1922   18  2456   23  2943   28  2415   23   10496   36   1359  13  1757  17  2178  21  2778  26  2424  23
     00-19             2802   17  4514   28  3880   24  3215   20  1863   11   16274   56   3747  23  3599  22  3425  21  3315  20  2188  13
            TOTALS     3686   13  6727   23  6802   23  6885   24  5058   17   29158  100   5367  18  5647  19  6049  21  6759  23  5336  18

  5. TIME SPENT WORKING RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES
                                          **MPA**                                                     **ITBS-ITED**
  HOURS WORKING           0.00-      1.55-      2.05       2.55-      3.05-                          PERCENTILE SCORE
    PER WEEK              1.54       2.04       2.54       3.04       4.00        TOTALS      01-20      21-40      41-60      61-80      81-100
                          N   PC     N   PC     N   PC     N   PC     N   PC     N    RC      N   PC     N   PC     N   PC     N   PC     N   PC
    40 OR MORE          126   18   215   31   170   24   131   19    55    8     697    2    177  25   163  23   156  22   135  19    66   9
    30-39               243   19   375   29   309   24   244   19   121    9    1292    5    314  24   306  24   299  23   251  19   122   9
    20-29               788   14  1468   26  1330   24  1259   22   774   14    5619   20   1121  20  1207  21  1256  22  1261  22   774  14
    10-19               886   12  1718   23  1762   24  1749   23  1332   18    7447   26   1250  17  1433  19  1595  21  1745  23  1424  19
    00-09              1554   12  2792   21  3077   23  3377   25  2704   20   13504   47   2359  17  2426  18  2636  20  3242  24  2841  21
            TOTALS     3597   13  6568   23  6648   23  6760   24  4986   17   28559  100   5221  18  5535  19  5942  21  6634  23  5227  18

  6. EDUCATIONAL ASPIRATIONS RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES
                                          **MPA**                                                     **ITBS-ITED**
                          0.00-      1.55-      2.05       2.55-      3.05-                          PERCENTILE SCORE
   ED. PLANS              1.54       2.04       2.54       3.04       4.00        TOTALS      01-20      21-40      41-60      61-80      81-100
                          N   PC     N   PC     N   PC     N   PC     N   PC     N    RC      N   PC     N   PC     N   PC     N   PC     N   PC
  HIGH SCHOOL-LESS     1379   36  1389   36   695   18   299    8    60    2    3822   13   1939  51  1073  28   515  13   231   6    64   2
  JOB OR MIL. TRNG.     698   23  1112   37   704   23   398   13   106    4    3018   11    951  32   876  29   655  22   406  13   130   4
  TECH-TRADE-BUS SCH    707   13  1494   28  1473   28  1153   22   445    8    5272   19   1009  19  1382  26  1435  27  1061  20   385   7
  COLL.-2 YRS.-LESS     288   10   769   28   826   30   639   23   225    8    2747   10    546  20   671  24   720  26   626  23   184   7
  COLL. GRAD.-ABOVE     498    4  1772   13  2944   22  4260   31  4152   30   13626   48    730   5  1521  11  2614  19  4288  31  4473  33
            TOTALS     3570   13  6536   23  6642   23  6749   24  4988   18   28485  100   5175  18  5523  19  5939  21  6612  23  5236  18

  7. CAR OWNERSHIP RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES
                                          **MPA**                                                     **ITBS-ITED**
                          0.00-      1.55-      2.05       2.55-      3.05-                          PERCENTILE SCORE
  OWNERSHIP STATUS        1.54       2.04       2.54       3.04       4.00        TOTALS      01-20      21-40      41-60      61-80      81-100
                          N   PC     N   PC     N   PC     N   PC     N   PC     N    RC      N   PC     N   PC     N   PC     N   PC     N   PC
  OWNING A CAR          452   31   468   32   286   20   170   12    78    5    1454    5    492  34   370  25   278  19   204  14   110   8
  NOT OWNING A CAR     3094   12  6040   22  6322   23  6555   24  4893   18   26904   95   4640  17  5119  19  5639  21  6396  24  5110  19
            TOTALS     3546   13  6508   23  6608   23  6725   24  4971   18   28358  100   5132  18  5489  19  5917  21  6600  23  5220  18
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CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 10

4. EXTRA CURRICULAR PARTICIPATION RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

COMPUTED ACTIVITY LEVEL	**MPA** 0.00-1.84		1.55-2.04		2.05 2.54		2.55-3.04		3.05-4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
80-100	13	38	9	26	7	21	4	12	1	3	34		18	53	5	15	1	3	7	21	3	9
60-79	15	8	19	10	25	13	49	26	81	43	189	1	19	10	20	11	15	8	51	27	84	44
40-59	93	4	278	12	439	19	661	28	857	37	2328	7	188	8	272	12	388	17	586	25	894	38
20-39	830	7	2038	18	2631	24	3012	27	2647	24	11158	32	1305	12	1772	16	2111	19	3016	27	2954	26
00-19	4185	20	5796	28	4427	21	3898	19	2375	11	20681	60	4971	24	4216	20	3830	19	4266	21	3398	16
TOTALS	5136	15	8140	24	7529	22	7624	22	5961	17	34390	100	6501	19	6285	18	6345	18	7926	23	7333	21

5. TIME SPENT WORKING RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

HOURS WORKING PER WEEK	**MPA** 0.00-1.84		1.55-2.04		2.05 2.54		2.55-3.04		3.05-4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	RC	N	PC	N	PC	N	PC	N	PC	N	PC
40 OR MORE	255	25	336	32	230	22	151	15	65	6	1037	3	308	30	248	24	176	17	205	20	100	10
30-39	357	21	507	29	417	24	296	17	143	8	1720	5	458	27	384	22	345	20	352	20	181	11
20-29	1176	17	1868	27	1609	23	1475	21	912	13	7040	21	1510	21	1387	20	1405	20	1581	22	1157	16
10-19	1064	13	1914	23	1825	22	1963	24	1583	19	8349	25	1324	16	1506	18	1586	19	2012	24	1921	23
00-09	2162	14	3405	22	3360	21	3679	23	3212	20	15818	47	2785	18	2678	17	2758	17	3689	23	3908	25
TOTALS	5014	15	8030	24	7441	22	7564	22	5915	17	33964	100	6385	19	6203	18	6270	18	7839	23	7267	21

6. EDUCATIONAL ASPIRATIONS RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

ED. PLANS	**MPA** 0.00-1.84		1.55-2.04		2.05 2.54		2.55-3.04		3.05-4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	RC	N	PC	N	PC	N	PC	N	PC	N	PC
HIGH SCHOOL-LESS	1693	42	1394	35	568	14	270	7	80	2	4005	12	2182	54	956	24	498	12	286	7	83	2
JOB OR MIL. TRNG.	922	27	1161	34	750	22	427	13	139	4	3399	10	1235	36	928	27	625	18	449	13	162	5
TECH-TRADE-BUS SCH	1095	16	2042	31	1723	26	1297	19	520	8	6677	20	1460	22	1791	27	1597	24	1346	20	483	7
COLL.-2 YRS.-LESS	439	14	1027	33	784	25	608	20	227	7	3085	9	605	20	809	26	779	25	654	21	238	8
COLL. GRAD.-ABOVE	821	5	2372	14	3603	22	4959	30	4949	30	16704	49	838	5	1706	10	2766	17	5101	31	6293	38
TOTALS	4970	15	7996	24	7428	22	7561	22	5915	17	33870	100	6320	19	6190	18	6265	18	7836	23	7259	21

7. CAR OWNERSHIP RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

OWNERSHIP STATUS	**MPA** 0.00-1.84		1.59-2.04		2.05 2.54		2.55-3.04		3.05-4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	RC	N	PC	N	PC	N	PC	N	PC	N	PC
OWNING A CAR	1116	28	1224	31	803	20	556	14	313	8	4012	12	1172	29	854	21	729	18	721	18	536	13
NOT OWNING A CAR	3776	13	6690	23	6573	22	6940	23	5561	19	29540	88	5025	17	5275	18	5486	19	7066	24	6688	23
TOTALS	4892	15	7914	24	7376	22	7496	22	5874	18	33552	100	6197	18	6129	18	6215	19	7787	23	7224	22

CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 11

4. EXTRA CURRICULAR PARTICIPATION RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

COMPUTED ACTIVITY LEVEL	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
80-100	11	33	3	15	6	18	4	12	7	21	33		14	42	3	9	5	15	2	6	9	27
60-79	11	2	32	7	56	12	111	24	256	55	466	1	19	4	46	10	45	10	140	30	216	46
40-59	111	3	299	9	559	16	1054	31	1389	41	3412	11	237	7	410	12	605	18	959	28	1201	35
20-39	735	7	1874	17	2420	23	3128	29	2587	24	10744	33	1470	14	2060	19	2057	19	2695	25	2462	23
00-19	3451	19	5160	29	3975	22	3474	20	1701	10	17761	55	4988	28	4317	24	3164	18	3247	18	2065	12
TOTALS	4319	13	7370	23	7016	22	7771	24	5940	18	32416	100	6708	21	6836	21	5876	18	7043	22	5953	18

5. TIME SPENT WORKING RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

HOURS WORKING PER WEEK	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
40 OR MORE	251	23	320	30	245	23	183	17	81	8	1080	3	383	34	294	27	178	16	170	16	75	7
30-39	372	19	574	29	453	23	391	20	172	9	1962	6	565	29	493	25	359	18	352	18	193	10
20-29	1192	15	2070	26	1804	23	1714	22	1069	14	7849	24	1757	22	1825	23	1557	20	1604	20	1106	14
10-19	929	12	1699	21	1749	22	2059	26	1542	19	7970	25	1380	17	1587	20	1522	19	1996	24	1585	20
00-09	1496	11	2635	20	2687	20	3365	25	3041	23	13224	41	2551	19	2569	19	2205	17	2956	22	2943	22
TOTALS	4240	13	7298	23	6938	22	7712	24	5905	18	32093	100	6624	21	6768	21	5821	18	6978	22	5902	18

6. EDUCATIONAL ASPIRATIONS RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

ED. PLANS	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
HIGH SCHOOL-LESS	1224	39	1072	34	465	15	268	9	79	3	3108	10	1796	58	726	23	314	10	209	7	63	2
JOB OR MIL. TRNG.	813	25	1131	35	736	23	401	12	137	4	3218	10	1357	42	986	30	492	15	327	10	76	2
TECH-TRADE-BUS SCH	1051	15	2044	30	1640	24	1446	21	589	9	6790	21	1808	27	2213	33	1456	21	1001	15	312	5
COLL.-2 YRS.-LESS	378	14	814	31	686	26	577	22	213	8	2668	8	664	25	861	32	587	22	427	16	129	5
COLL. GRAD.-ABOVE	720	4	2171	13	3398	21	4999	31	4877	30	16165	51	927	6	1978	12	2952	18	4999	31	5309	33
TOTALS	4186	13	7252	23	6925	22	7691	24	5895	18	31049	100	6552	21	6744	21	5801	18	6963	22	5889	18

7. CAR OWNERSHIP RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

OWNERSHIP STATUS	**MPA** 0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
OWNING A CAR	1607	21	2218	29	1651	22	1443	19	750	10	7669	24	2074	27	1793	23	1373	18	1429	19	1000	13
NOT OWNING A CAR	2524	11	4973	21	5210	22	6190	26	5115	21	24012	76	4384	18	4882	20	4388	18	5499	23	4859	20
TOTALS	4131	13	7191	23	6861	22	7633	24	5865	19	31681	100	6458	20	6675	21	5761	18	6928	22	5859	18

CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY

GRADE 12

4. EXTRA CURRICULAR PARTICIPATION RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

COMPUTED ACTIVITY LEVEL	**MPA** 0.00-1.54		1.55-2.04		2.05 2.54		2.55-3.04		3.05-4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
80-100	6	11	12	23	9	17	5	9	21	40	53		15	28	4	8	9	17	7	13	18	34
60-79	9	1	30	4	53	8	153	22	448	65	693	2	28	4	71	10	106	15	173	25	315	45
40-59	46	1	248	6	519	13	1219	30	2059	50	4091	13	255	6	446	11	884	22	1038	25	1440	36
20-39	441	4	1515	14	2155	20	3307	31	3160	30	10578	33	1354	13	1759	17	2620	25	2310	22	2535	24
00-19	2082	13	4281	26	3982	24	3968	24	2315	14	16628	52	4028	24	3691	22	3895	23	2822	17	2192	13
TOTALS	2584	8	6086	19	6718	21	8652	27	8003	25	32043	100	5680	18	5971	19	7514	23	6350	20	6528	20

5. TIME SPENT WORKING RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

HOURS WORKING PER WEEK	**MPA** 0.00-1.54		1.55-2.04		2.05 2.54		2.55-3.04		3.05-4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
40 OR MORE	159	15	310	30	233	23	234	23	95	9	1031	3	343	33	276	27	197	19	130	13	85	8
30-39	231	12	536	27	471	24	473	24	264	13	1975	6	495	25	446	23	493	25	335	17	206	10
20-29	775	9	1928	23	1957	24	2130	26	1528	18	8318	27	1587	19	1736	21	2045	25	1557	19	1393	17
10-19	520	7	1245	16	1529	20	2181	29	2131	28	7606	25	1139	15	1306	17	1810	24	1660	22	1691	22
00-09	759	7	1768	15	2206	19	3226	28	3637	31	11596	38	1825	16	1936	17	2640	23	2377	20	2818	24
TOTALS	2444	8	5787	19	6396	21	8244	27	7655	25	30526	100	5389	18	5700	19	7185	24	6059	20	6193	20

6. EDUCATIONAL ASPIRATIONS RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

ED. PLANS	**MPA** 0.00-1.54		1.55-2.04		2.05 2.54		2.55-3.04		3.05-4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
HIGH SCHOOL-LESS	450	25	596	33	379	21	261	14	133	7	1819	6	931	51	425	23	267	15	120	7	76	4
JOB OR MIL. TRNG.	522	18	961	33	683	23	586	20	203	7	2955	10	1222	41	837	28	590	20	227	8	79	3
TECH-TRADE-BUS SCH	711	12	1615	27	1520	25	1448	24	773	13	6067	20	1679	28	1773	29	1598	26	762	13	255	4
COLL.-2 YRS.-LESS	218	9	566	25	630	27	560	24	321	14	2295	8	523	23	642	28	668	29	337	15	125	5
COLL. GRAD.-ABOVE	518	3	1990	12	3151	18	5359	31	6210	36	17228	57	984	6	1979	11	4039	23	4586	27	5640	33
TOTALS	2419	8	5728	19	6363	21	8214	27	7640	25	30364	100	5339	18	5656	19	7162	24	6032	20	6175	20

7. CAR OWNERSHIP RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

OWNERSHIP STATUS	**MPA** 0.00-1.54		1.55-2.04		2.05 2.54		2.55-3.04		3.05-4.00		TOTALS		**ITBS-ITED** PERCENTILE SCORE 01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
OWNING A CAR	1221	12	2662	26	2478	24	2482	24	1500	15	10343	34	2305	22	2136	21	2463	24	1913	18	1526	15
NOT OWNING A CAR	1162	6	3000	15	3809	19	5644	29	6053	31	19668	66	2973	15	3467	18	4610	23	4055	21	4563	23
TOTALS	2383	8	5662	19	6287	21	8126	27	7553	25	30011	100	5278	18	5603	19	7073	24	5968	20	6089	20

Items 8, 9, 10 and 11

8. Car Ownership Related to Time Spent Working for Pay

One would expect that students who do own cars would be more likely to be working for pay than those who do not. On the other hand, it could be that the owners of cars already have sufficient funds to operate them, in which case car ownership would be relatively independent of the time spent working for pay. The statewide summary for Grade 12 does indicate that the student car owners do spend more time working than the non-owners. In fact, 26 percent of the former group reported 21 hours or more of work per week, against only 9 percent of the latter group.

Of course, one can speculate on the meaning of the Item 8 tables. For example, local schools may question the advisability of pupils' owning cars from the standpoint that maintenance of a car appears to necessitate more outside work by the owner. Special instruction may, in fact, be needed in the school curriculum to impress upon students the fact that car ownership imposes some rather heavy responsibilities, as well as restrictions, on the pupil's activities.

Items 7 and 8 indicate that student car owners tend to work more hours than other students and that those working many hours tend to receive poorer grades. Considered together, the two sets of data seem to support the point of view that car ownership may be detrimental to pupil achievement. Such a cause-and-effect relationship is not established by these data, however, and there is no reason to believe that car ownership necessarily leads to lower achievement, or would lead to lower achievement, for all students.

9. Student Occupational Aspirations Related to Parent Occupation

Teachers are fond of pointing out that education is one of the chief means of social mobility within the American culture. The question obviously arises then: Do students, in fact, aspire to occupations higher than those presently engaged in by their parents, or do they tend to choose very similar occupations? Item 9 gives some indication of the relationship between pupil aspirations and parent occupation. At the Grade 12 level, the statewide summary indicates a fairly strong relation between pupils' vocational aspirations and their parents' occupations. The relationship is stronger in respect to the skilled or business category than the manual labor categories, and strongest for the managerial and professional categories. Moreover, a considerable amount of social mobility is also indicated by these data. In every grade, about 40 percent of the pupils whose parents have farm-related occupations indicated an interest in managerial or professional work. In almost every grade, 4-5 percent of the pupils whose parents were professional or managerial aspired to occupations related to farming.

It would be expected that local reports for schools which draw pupils primarily from rural areas would show a much higher percent of interest in farm-related occupations than do the state reports. In communities which have a high proportion of professional people, a heightened interest on the part of pupils in the managerial-professional occupations is likely.

The statewide summaries exhibit a rather amazing grade-to-grade stability in the percent of pupils selecting each of the occupational classifications. This could mean either that the pupils' occupational aspirations are already set by the seventh grade, or, that the students have not yet made up their minds by their senior year. It is also of interest to note here that approximately 48 percent of the seniors are interested in the managerial and professional occupational class. Yet in the Item 6 data we see that 57 percent of the seniors hoped for a college degree and possibly more. While this discrepancy is not large, it suggests that some pupils desire educational experience beyond what their job interests actually demand. This may become a definite trend, as more and more jobs that formerly required only fundamental skills training now require advanced training at the college level.

10. Student Educational Aspirations Related to Parent Education

Whereas in Item 9 we were relating students' occupational aspirations with parental occupations, we now compare students' *educational* aspirations with parental education. In the compilation of this table the responses of the boys were related to the father's education, while those of the girls were related to the mother's education. Although positive relationship between the two factors is not particularly desirable, some trend in that direction is to be expected. Such a trend is, infact, apparent in the distributions for all grade levels. For example, from 40 to 50 percent of the pupils whose parents had a high school education or less aspired to college graduation or above. For those pupils whose parents had a college degree or above, approximately 90 percent of the pupils indicated similar aspirations. Therefore one can conclude that, while parental education does not fix the aspirations of the students, there is some tendency for pupils whose parents have little education to have lower educational aspirations than do the children of well-educated parents.

11. Extracurricular Participation Related to Distance from School

One would think that pupils living further from school might tend to participate less in extracurricular activities If a trend of this nature does, in fact, exist, it might have a bearing upon such matters as the selection and scheduling of extracurricular offerings or the provision of transportation to and from these activities. Whether there really is a strong tendency of this kind is difficult to determine from the data at hand, because of the coarseness of the activity level scale (mentioned earlier in the discussion of Item 4). The state tables suggest a weak, but not consistent, trend in that direction.

Again, the comparisons between the state and local summaries should be tempered by knowledge of the local program and school population. For example, presence of Future Farmers of America and Future Homemakers of America could result in a trend at the local level just the opposite of that suggested by the state totals.

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          CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

        STATE-WIDE SUMMARY                               GRADE  7

   8. CAR OWNERSHIP RELATED TO TIME SPENT WORKING FOR PAY
                                      HOURS SPENT WORKING
   OWNERSHIP STATUS       0-5        6-10       11-15        16-20      21-ABOVE     TOTALS
                         N    PC     N    PC     N    PC     N    PC     N    PC     N     PC
   OWNING A CAR        426   59    118   16     66    9     39    5     73   10    722     2
   NOT OWNING A CAR  24045   79   3527   12   1333    4    678    2    933    3  30516    98
            TOTALS   24471   78   3645   12   1399    4    717    2   1006    3  31238   100

   9. STUDENT OCCUPATIONAL ASPIRATIONS RELATED TO PARENT OCCUPATION
                                      STUDENT ASPIRATIONS
     PARENT          FARM OR       UN-         SEMI-       SKILLED    MANAG.
    OCCUPATION       RELATED     SKILLED      SKILLED      OR BUS      PROF.        TOTALS
    (LIKE SEX)        N    PC     N    PC     N    PC     N    PC     N    PC      N     PC
   FARM RELATED     3197   28   208    2   1363   12   2031   18   4492   40   11291    43
   UNSKILLED         321   13   264   11    321   17    698   29    806   33    2410     9
   SEMI-SKILLED      413   11   112    3    797   22    945   26   1331   37    3598    14
   SKILLED OR BUS.   415    8   117    2    518   10   1796   35   2279   44    5125    20
   MANAGERIAL-PROFL  188    5    47    1    240    7    657   18   2523   69    3655    14
            TOTALS  4534   17   748    3   3239   12   6127   23  11431   44   26079   100

  10. STUDENT EDUCATIONAL ASPIRATIONS RELATED TO PARENT EDUCATION
                                      STUDENT ASPIRATIONS
   PARENT EDUCATION  HI SC OR     JOB OR      TEC-TRA    COLLEGE    COLL GRAD
   (LIKE SEX)          LESS      MIL TRNG     BUS SCH    4-LESS     OR ABOVE       TOTALS
                      N    PC     N    PC     N    PC     N    PC     N    PC      N     PC
   HIGH SCH OR LESS 4804   23  2587   12   2170   10   2844   14   8519   41   20924    72
   TECH-TRDE-BUS SCH 129    7   183   10    325   17    205   11   1068   56    1910     7
   COLL.-LESS 4 YRS. 215    6   231    6    281    8    440   12   2438   68    3605    12
   COLL. GRAD -ABOVE  66    3   111    4     88    3     67    3   2196   87    2528     9
            TOTALS  5214   18  3112   11   2864   10   3556   12  14221   49   28967   100

  11. EXTRA CURRICULAR PARTICIPATION RELATED TO DISTANCE FROM SCHOOL
                                      COMPUTED ACTIVITY LEVEL
   DISTANCE TO        80-100      60-79       40-59       20-39        00-19        TOTALS
    SCHOOL IN MILES   N    PC     N    PC     N    PC     N    PC     N    PC      N     PC
      LESS -1        25         128    1   1161    7   5592   35   8963   56   15869    49
         1-5          9          92    1    706    7   3393   34   5643   57    9843    30
         5-10         4          31    1    304    6   1753   36   2838   58    4930    15
        10-20         4           8         122    7    654   36   1048   57    1836     6
      ABOVE-20                                5    6     29   36     46   58      80
            TOTALS   42         259    1   2298    7  11421   35  18538   57   32558   100
        CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS
      STATE-WIDE SUMMARY                             GRADE  8

   8. CAR OWNERSHIP RELATED TO TIME SPENT WORKING FOR PAY
                                        HOURS SPENT WORKING
   OWNERSHIP STATUS       0-5        6-10       11-15      16-20      21-ABOVE     TOTALS
                        N    PC     N    PC     N    PC     N    PC     N    PC      N    PC
   OWNING A CAR        641   56    189   16    100    9     90    8    134   12    1184    3
   NOT OWNING A CAR  25372   76   4348   13   1530    5    863    3   1257    4   33370   97
           TOTALS    26013   75   4537   13   1630    5    953    3   1391    4   34524  100

   9. STUDENT OCCUPATIONAL ASPIRATIONS RELATED TO PARENT OCCUPATION
                                        STUDENT ASPIRATIONS
      PARENT          FARM OR      UN-        SEMI-      SKILLED   MANAG.
    OCCUPATION        RELATED    SKILLED     SKILLED     OR BUS    PROF.          TOTALS
    (LIKE SEX)        N    PC     N    PC     N    PC     N    PC     N    PC      N    PC
   FARM RELATED     2817   23    187    2   1535   12   2602   21   5161   42   12302   42
   UNSKILLED         235    9    255   10    370   14    909   34    885   33    2654    9
   SEMI-SKILLED      404    9    138    3    801   19   1307   31   1619   38    4269   14
   SKILLED OR BUS.   390    6    116    2    609   10   2053   34   2910   48    6078   21
   MANAGERIAL-PROF.  143    3     45    1    244    6    810   19   3076   71    4318   15
          TOTALS    3989   13    741    3   3559   12   7681   26  13651   46   29621  100

   10. STUDENT EDUCATIONAL ASPIRATIONS RELATED TO PARENT EDUCATION
                                        STUDENT ASPIRATIONS
   PARENT EDUCATION  H. S. OR    JOB OR     TEC-TRA    COLLEGE   COLL GRAD
   (LIKE SEX)         LESS      MIL TRNG    BUS SCH    2-LESS    OR ABOVE       TOTALS
                      N    PC     N    PC     N    PC     N    PC     N    PC      N    PC
   HIGH SCH OR LESS 4649   20   2613   11   3312   14   2726   12   9975   43   23275   72
   TECH-TRDE-BUS SCH 126    5    161    7    444   19    212    9   1437   60    2380    7
   COLL.-LESS 4 YRS. 203    5    195    5    374    9    428   11   2799   70    3999   12
   COLL. GRAD -ABOVE  38    1     68    2    101    4     69    3   2476   90    2752    8
           TOTALS   5016   15   3037    9   4231   13   3435   11  16687   51   32406  100

   11. EXTRA CURRICULAR PARTICIPATION RELATED TO DISTANCE FROM SCHOOL
                                     COMPUTED ACTIVITY LEVEL
   DISTANCE TO        80-100     60-79      40-59      20-39       00-19        TOTALS
     SCHOOL IN MILES  N    PC     N    PC     N    PC     N    PC     N    PC      N    PC
     LESS -1         18          185    1   1305    8   5990   35   9457   56   16925   48
         1-5         13           78    1    794    7   3840   34   6523   58   21248   32
        5-10          3           27    1    314    6   1900   35   3120   58    5364   15
       10-20                       9         120    7    463   36   1029   57    1821    5
     ABOVE-20
                                               4    4     41   40     97   56     102
           TOTALS    34          269    1   2537    7  12434   35  20186   57   35466  100
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CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 9

8. CAR OWNERSHIP RELATED TO TIME SPENT WORKING FOR PAY

	HOURS SPENT WORKING											
OWNERSHIP STATUS	0-5		6-10		11-15		16-20		21-ABOVE		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
OWNING A CAR	1096	55	309	15	172	9	143	7	288	14	2008	5
NOT OWNING A CAR	27006	75	4593	13	1779	5	1084	3	1655	5	36117	95
TOTALS	28102	74	4902	13	1951	5	1227	3	1943	5	38125	100

9. STUDENT OCCUPATIONAL ASPIRATIONS RELATED TO PARENT OCCUPATION

	STUDENT ASPIRATIONS											
PARENT OCCUPATION (LIKE SEX)	FARM OR RELATED		UN-SKILLED		SEMI-SKILLED		SKILLED OR BUS		MANAG. PROF.		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
FARM RELATED	3593	23	241	2	1794	12	3619	23	6187	40	15434	46
UNSKILLED	300	11	260	9	386	14	963	34	931	33	2840	9
SEMI-SKILLED	440	10	136	3	847	19	1417	32	1604	36	4444	13
SKILLED OR BUS.	415	7	111	2	592	10	2153	35	2939	47	6210	19
MANAGERIAL-PROF.	189	4	40	1	261	6	844	19	3147	70	4481	13
TOTALS	4937	15	788	2	3880	12	8996	27	14808	44	33409	100

10. STUDENT EDUCATIONAL ASPIRATIONS RELATED TO PARENT EDUCATION

	STUDENT ASPIRATIONS											
PARENT EDUCATION (LIKE SEX)	H. S. OR LESS		JOB OR MIL TRNG		TEC-TRA BUS SCH		COLLEGE 3-LESS		COLL GRAD OR ABOVE		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
HIGH SCH OR LESS	4598	17	3183	12	5163	19	2871	11	10957	41	26772	73
TECH-TRDE-BUS SCH	127	5	192	7	562	21	227	8	1582	59	2690	7
COLL.-LESS 4 YRS.	174	4	235	5	529	12	426	10	3055	69	4419	12
COLL. GRAD -ABOVE	47	2	88	3	109	4	59	2	2372	89	2675	7
TOTALS	4946	14	3698	10	6363	17	[illegible]	10	17966	49	36556	100

11. EXTRA CURRICULAR PARTICIPATION RELATED TO DISTANCE FROM SCHOOL

	COMPUTED ACTIVITY LEVEL											
DISTANCE TO	80-100		60-79		40-59		20-39		00-19		TOTALS	
SCHOOL IN MILES	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
LESS -1	10		152	1	1472	9	6214	37	8731	53	16579	43
1-5	13		79	1	946	8	4400	36	6896	56	12334	32
5-10	5		22		423	6	2457	34	4393	60	7300	19
10-20	4		10		120	5	717	29	1625	66	2476	6
ABOVE-20			1	1	1	1	24	26	68	72	94	
TOTALS	32		264	1	2962	8	13812	36	21713	56	38783	100

CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 10

8. CAR OWNERSHIP RELATED TO TIME SPENT WORKING FOR PAY

OWNERSHIP STATUS	HOURS SPENT WORKING 0-5		6-10		11-15		16-20		21-ABOVE		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
OWNING A CAR	2458	51	607	12	500	10	463	10	831	17	4859	12
NOT OWNING A CAR	25281	73	4094	12	1971	6	1549	4	1974	6	34869	88
TOTALS	27739	70	4701	12	2471	6	2012	5	2805	7	39728	100

9. STUDENT OCCUPATIONAL ASPIRATIONS RELATED TO PARENT OCCUPATION

PARENT OCCUPATION (LIKE SEX)	STUDENT ASPIRATIONS FARM OR RELATED		UN-SKILLED		SEMI-SKILLED		SKILLED OR BUS		MANAG. PROF.		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
FARM RELATED	3725	23	256	2	1855	12	3846	24	6194	39	15876	45
UNSKILLED	282	9	234	8	405	13	1068	36	1016	34	3005	9
SEMI-SKILLED	446	10	127	3	882	19	1463	32	1708	37	4626	13
SKILLED OR BUS.	468	7	129	2	631	10	2156	33	3192	49	6576	19
MANAGERIAL-PROF.	202	4	55	1	285	6	915	18	3507	71	4964	14
TOTALS	5123	15	801	2	4058	12	9448	27	15617	45	35047	100

10. STUDENT EDUCATIONAL ASPIRATIONS RELATED TO PARENT EDUCATION

PARENT EDUCATION (LIKE SEX)	STUDENT ASPIRATIONS HI S. OR LESS		JOB OR MIL TRNG		TEC-TRA BUS SCH		COLLEGE 2-LESS		COLL GRAD OR ABOVE		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
HIGH SCH OR LESS	4127	15	3297	12	6166	22	2739	10	11591	42	27920	73
TECH-TRDE-BUS SCH	116	4	207	7	609	20	246	8	1842	61	3020	8
COLL.-LESS 4 YRS.	179	4	243	5	609	13	380	8	3197	69	4608	12
COLL. GRAD -ABOVE	43	2	58	2	134	5	55	2	2512	90	2802	7
TOTALS	4465	12	3805	10	7518	20	3420	9	19142	50	38350	100

11. EXTRA CURRICULAR PARTICIPATION RELATED TO DISTANCE FROM SCHOOL

DISTANCE TO SCHOOL IN MILES	COMPUTED ACTIVITY LEVEL 80-100		60-79		40-59		20-39		00-19		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
LESS -1	15		93	1	1089	7	4893	33	8595	59	14685	36
1-5	15		79	1	927	6	4518	30	9282	63	14821	37
5-10	7		30		491	6	2631	33	4760	60	7919	20
10-20	4		6		147	5	837	30	1831	65	2825	7
ABOVE-20			1	1	4	3	33	25	93	71	131	
TOTALS	41		209	1	2658	7	12912	32	24561	61	40381	100

CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 11

8. CAR OWNERSHIP RELATED TO TIME SPENT WORKING FOR PAY

HOURS SPENT WORKING

OWNERSHIP STATUS	0-5		6-10		11-15		16-20		21-ABOVE		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
OWNING A CAR	3997	44	1151	13	922	10	1065	12	2011	22	9146	24
NOT OWNING A CAR	19086	67	3274	12	2051	7	1842	6	2169	8	28422	76
TOTALS	23083	61	4425	12	2973	8	2907	8	4180	11	37568	100

9. STUDENT OCCUPATIONAL ASPIRATIONS RELATED TO PARENT OCCUPATION

STUDENT ASPIRATIONS

PARENT OCCUPATION (LIKE SEX)	FARM OR RELATED		UN-SKILLED		SEMI-SKILLED		SKILLED OR BUS		MANAG. PROF.		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
FARM RELATED	3493	23	239	2	1618	11	3617	24	5999	40	14968	45
UNSKILLED	247	9	184	7	323	12	1042	38	965	35	2761	8
SEMI-SKILLED	441	10	125	3	754	17	1495	33	1665	37	4480	13
SKILLED OR BUS.	496	8	112	2	572	9	1996	31	3199	50	6378	19
MANAGERIAL-PROF.	237	5	41	1	269	5	877	17	3606	72	5030	15
TOTALS	4914	15	701	2	3536	11	9027	27	15434	46	33612	100

10. STUDENT EDUCATIONAL ASPIRATIONS RELATED TO PARENT EDUCATION

STUDENT ASPIRATIONS

PARENT EDUCATION (LIKE SEX)	HJ S. OR LESS		JOB OR MIL TRNG		TEC-TRA BUS SCH		COLLEGE 2-LESS		COLL GRAD OR ABOVE		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
HIGH SCH OR LESS	3229	12	3229	12	6302	24	2394	9	11331	43	26485	73
TECH-TRDE-BUS SCH	97	3	211	7	618	21	226	8	1838	61	2990	8
COLL.-LESS 4 YRS.	135	3	201	5	612	14	325	7	3131	71	4404	12
COLL. GRAD -ABOVE	34	1	48	2	106	4	76	3	2350	90	2614	7
TOTALS	3495	10	3689	10	7638	21	3021	8	18650	51	36493	100

11. EXTRA CURRICULAR PARTICIPATION RELATED TO DISTANCE FROM SCHOOL

COMPUTED ACTIVITY LEVEL

DISTANCE TO SCHOOL IN MILES	80-100		60-79		40-59		20-39		00-19		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
LESS -1	15		244	2	1606	12	4737	34	7273	52	13875	36
1-5	17		153	1	1326	9	4405	31	8256	58	14157	37
5-10	6		99	1	746	10	2464	34	4007	55	7322	19
10-20	6		24	1	219	8	861	33	1521	58	2631	7
ABOVE-20			1	1	8	7	28	23	84	69	121	
TOTALS	44		521	1	3905	10	12495	33	21141	55	38106	100

CARDPAC-SPRING 1965---FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 12

8. CAR OWNERSHIP RELATED TO TIME SPENT WORKING FOR PAY

	HOURS SPENT WORKING											
OWNERSHIP STATUS	0-5		6-10		11-15		16-20		21-ABOVE		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
OWNING A CAR	4969	40	1393	11	1220	10	1542	12	3245	26	12369	35
NOT OWNING A CAR	14942	64	2499	11	1890	8	1841	8	2003	9	23175	65
TOTALS	19911	56	3892	11	3110	9	3383	10	5248	15	35544	100

9. STUDENT OCCUPATIONAL ASPIRATIONS RELATED TO PARENT OCCUPATION

	STUDENT ASPIRATIONS											
PARENT OCCUPATION (LIKE SEX)	FARM OR RELATED		UN-SKILLED		SEMI-SKILLED		SKILLED OR BUS		MANAG. PROF.		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
FARM RELATED	3556	25	190	1	1220	9	3501	25	5751	40	14218	44
UNSKILLED	233	9	136	5	322	12	967	37	951	36	2609	8
SEMI-SKILLED	471	11	82	2	552	13	1398	32	1835	42	4338	13
SKILLED OR BUS.	574	9	84	1	418	7	1912	30	3390	53	6378	20
MANAGERIAL-PROF.	255	5	40	1	213	4	805	16	3745	74	5058	16
TOTALS	5089	16	532	2	2725	8	8583	26	15672	48	32601	100

10. STUDENT EDUCATIONAL ASPIRATIONS RELATED TO PARENT EDUCATION

	STUDENT ASPIRATIONS											
PARENT EDUCATION (LIKE SEX)	HI S. OR LESS		JOB OR MIL TRNG		TEC-TRA BUS SCH		COLLEGE 2-LESS		COLL GRAD OR ABOVE		TOTALS	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
HIGH SCH OR LESS	1855	7	3075	12	5715	23	2076	8	12620	50	25341	73
TECH-TRDE-BUS SCH	60	2	163	4	509	18	169	6	1886	68	2787	8
COLL.-LESS 4 YRS.	99	2	148	4	510	12	226	6	3117	76	4100	12
COLL. GRAD -ABOVE	32	1	45	2	112	4	48	2	2353	91	2590	7
TOTALS	2046	6	3431	10	6846	20	2519	7	19976	57	34818	100

11. EXTRA CURRICULAR PARTICIPATION RELATED TO DISTANCE FROM SCHOOL

	COMPUTED ACTIVITY LEVEL											
DISTANCE TO	80-100		60-79		40-59		20-39		00-19		TOTALS	
SCHOOL IN MILES	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
LESS -1	21		347	3	1865	14	4585	35	6259	48	13077	36
1-5	24		262	2	1595	12	4419	33	7245	53	13545	38
5-10	14		136	2	969	14	2405	35	3278	48	6802	19
10-20	3		35	1	271	11	793	33	1275	54	2377	7
ABOVE-20			3	2	8	6	43	31	83	61	137	
TOTALS	62		783	2	4706	13	12245	34	18140	50	35938	100

Items 12 and 13

12. Post High School Educational Expectations Related to Mark-Point Average and Iowa Testing Program Scores

In Part II of the questionnaire, twelfth graders were asked to provide information about their expectations for continuing their education from high school. One question asked what type of school or training course the student expected to enter in the fall (or later). For this analysis the responses to the question were grouped into the following five categories:

(a) College, junior college, or registered nurse training
(b) Trade, technical or business school, or health service training
(c) Apprenticeship or correspondence education
(d) Military service school or training
(e) No training beyond high school

It is interesting to note that 53 percent of the pupils in Iowa planned to obtain some college, junior college, or registered nurse training beyond the high school. This should be contrasted with the educational aspirations indicated in the Item 6 data. For that question 65 percent of the seniors had indicated a desire for some college training, and most of these wanted a degree or better. In other words approximately 12 percent of the pupils who had aspired to attend college were not actually expecting to do so. It would be interesting to know the reasons why these students do not expect their hopes to materialize.

One also notices in Table 12 a rather marked relationship between educational expectations and academic performance. Still, a rather large number of pupils in the lowest MPA and score categories expect to attend college. Some of these pupils may have failed to mark their responses correctly in answering this question. If these particular percentages are not attributable to student error in filling out the CardPac Questionnaire, the situation has some important implications for guidance counselors and teachers involved in advising pupils about their educational plans. There also is a rather large percent of pupils (12 percent) with high averages (3.05 to 4.00) that do not expect to obtain further education. In view of society's need for persons who are especially qualified, intellectually, for higher education, this proportion is rather disturbing. However, the Iowa Test score distributions for Item 12 show only 4 percent of the highest-ranking students do not expect to attend college. The inconsistence of the two figures suggests that too-lenient marking practices may account for inclusion of many of the 12 percent in the top MPA category.

The local results should be helpful to school officials in assessing the degree to which their students are making realistic educational plans. If in many instances the student's intention seems at variance with his abilities, as revealed by his position in these distributions, greater local emphasis on the guidance aspects of education may be called for.

13. School Mobility Related to Mark-Point Average and Iowa Testing Program Scores

This analysis, also, was compiled only for twelfth graders. The distributions offer a picture of the mobility of students at the secondary school level as well as an indication of the relationship between mobility and school achievement.

According to the state summary, more than half (52 percent) of the seniors had never changed schools. Another 20 percent had transferred only once. It seems logical to think that those who have changed school frequently are handicapped to some degree in their educational development. The statewide summary for Item 13 provides evidence that, to some extent, such a relationship actually does exist. It would be a mistake, of course, to assume that frequent moving on the part of a student or his family, *per se*, is the cause of poor school achievement. Undoubtedly there are other factors. The moves may even be a reflection of other conditions and circumstances contributing to poor school achievement.

The reports for certain communities undoubtedly will deviate from the statewide norms considerably. For example, an opposite relationship might be found for a town of moderate size in which the primary industry employs a large number of professional people, who tend to be quite mobile. On the other hand, if local industries are predominantly of the types that hire people with a low level of education, an even stronger relationship between mobility and school achievement than the statewide trend might result. In any event, it would appear that consideration of mobility might contribute to predictions of pupil achievement.

CARDPAC-SPRING 1965----FREQUENCY DISTRIBUTION RELATIONSHIPS BETWEEN SELECTED ITEMS

STATE-WIDE SUMMARY GRADE 12

12. POST-HIGH SCHOOL EDUCATIONAL ASPIRATIONS RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

ED. PLANS	**MPA**										TOTALS		**ITBS-ITED** PERCENTILE SCORE									
	0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00				01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
COLL-JR COLLEGE	424	3	1728	11	2792	18	4901	31	5826	37	15668	53	769	5	1674	11	3550	23	4240	27	5435	35
TRA-TEC-BUS-NEA SV	687	11	1623	25	1647	26	1582	25	859	13	6398	22	1696	27	1803	28	1740	27	875	14	284	4
APPREN-CORRESPOND	75	17	121	27	137	31	86	19	30	7	449	2	157	35	133	30	98	22	46	10	15	3
MIL. SVC SCHOOL	157	16	310	33	269	28	169	18	48	5	953	3	287	30	253	27	228	24	125	13	60	6
NONE	959	16	1758	29	1368	22	1309	21	735	12	6129	21	2236	36	1652	27	1369	22	632	10	240	4
TOTALS	2302	8	5537	19	6213	21	8047	27	7498	25	29597	100	5145	17	5515	19	6985	24	5918	20	6034	20

13. SCHOOL MOBILITY RELATED TO MARK POINT AVERAGE AND IOWA TESTING PROGRAM SCORES

NUMBER TIMES CHANGED SCHOOLS	**MPA**										TOTALS		**ITBS-ITED** PERCENTILE SCORE									
	0.00- 1.54		1.55- 2.04		2.05 2.54		2.55- 3.04		3.05- 4.00				01-20		21-40		41-60		61-80		81-100	
	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC	N	PC
5 OR MORE	215	11	440	23	463	25	422	22	337	18	1877	6	375	20	419	22	429	23	335	18	319	17
4 TIMES	129	10	304	24	303	24	319	25	219	17	1274	4	281	22	264	21	284	22	241	19	204	16
3 TIMES	218	10	514	23	485	22	605	27	418	19	2240	8	482	22	438	20	530	24	403	18	387	17
2 TIMES	242	9	547	20	546	20	730	27	619	23	2684	9	523	19	488	18	610	23	518	19	545	20
1 TIME	442	7	1150	19	1293	21	1654	27	1533	25	6072	20	1065	18	1130	19	1405	23	1223	20	1249	21
NONE	1065	7	2620	17	3118	20	4346	28	4393	28	15542	52	2425	16	2777	18	3748	24	3222	21	3370	22
TOTALS	2311	8	5575	19	6208	21	8076	27	7519	25	29689	100	5151	17	5516	19	7006	24	5942	20	6074	20